

280 ppmv

atmospheric concentrations of CO₂
in parts per millions by volume (ppmv)

380 ppmv

450 ppmv

C&C

Aubrey Meyer
GCI

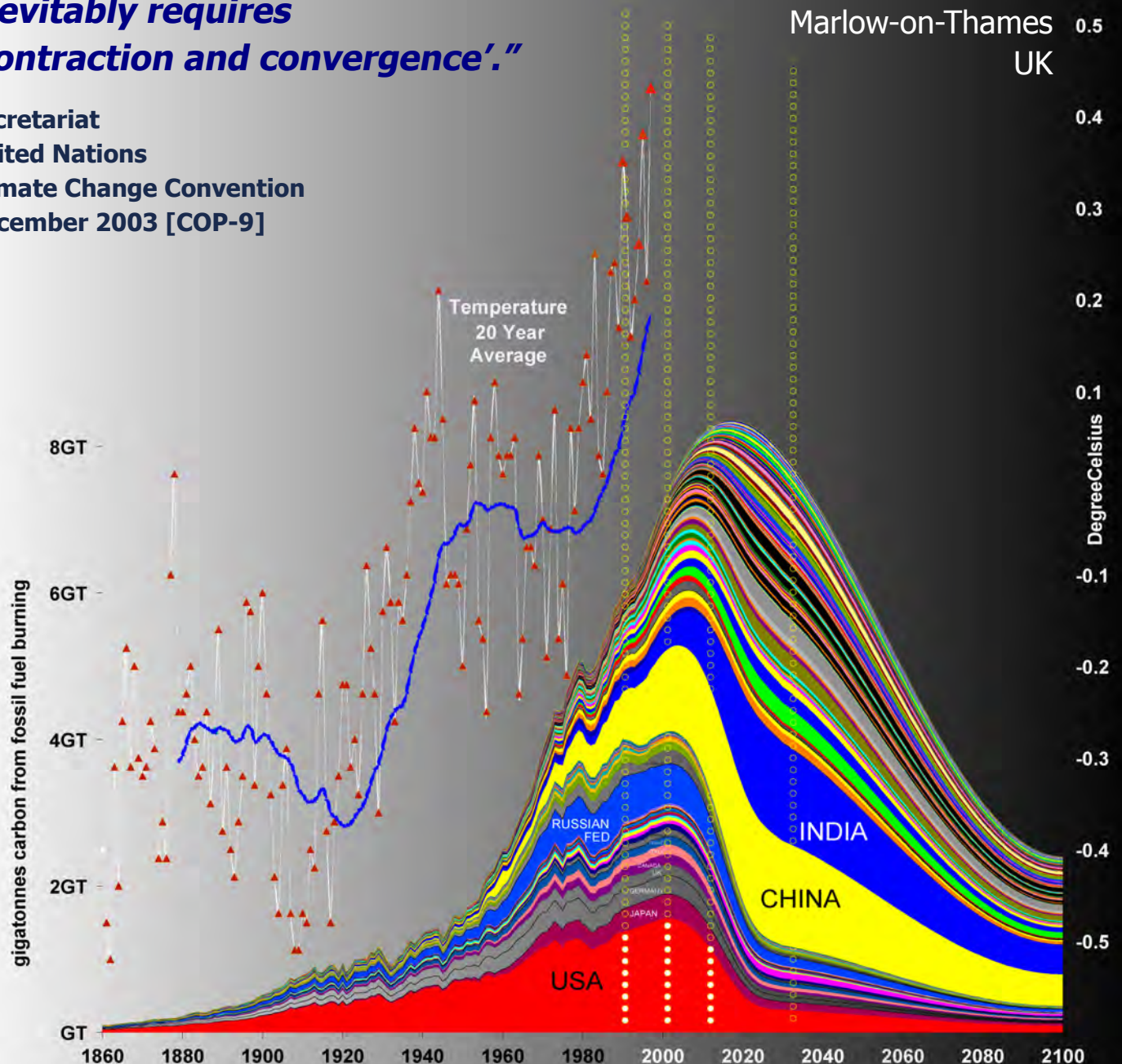
'Contraction and Convergence'

Guest Speaker
BP Sustainable Mobility
Conference on Climate Change

**"Achieving the goal of the
UN Climate Treaty
inevitably requires
'contraction and convergence'."**

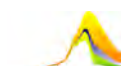
21 - 22 April, 2004
Crown Plaza
Marlow-on-Thames
UK

Secretariat
United Nations
Climate Change Convention
December 2003 [COP-9]



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GCI gave evidence to the: -

House of Commons Environmental Audit Committee Enquiry into:

**“The International Challenge of Climate Change;
UK Leadership in the G8 and EU.**

“

Question 79 Chairman,

“The problem is that we have been aiming at the same question now for about 20 minutes and the answer is always the same, which is that if we do not do it, we are all doomed basically and because we are all doomed if we do not do it, we will do it.

That is the logic of your position.”

Mr Meyer:

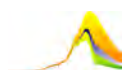
“Do you disagree with it?”

Question 80 Chairman:

“We will produce a report in due course. You will find out whether we agree or not. The trouble is that we live in a world where change is not happening. You may say that climate change is forcing the pace of change and that institutions are being challenged and everyone is going to have to do it. However nobody is doing it.”

Mr Meyer:

“I take your point entirely “



The Committee published its Report

22. Any framework which involves radical emission reductions would in practice resemble the Contraction and Convergence approach advocated by the Global Commons Institute. Indeed, in terms of domestic policy aims, the UK Government has already implicitly accepted this approach in adopting the 60% carbon reduction target for 2050; and it is therefore inconsistent not to adopt such an approach internationally.

We do not see any credible alternative and none was suggested in evidence to our inquiry. We therefore recommend that the UK Government should formally adopt and promote Contraction and Convergence as the basis for future international agreements to reduce emissions.

101. We would urge the Government not to see its role during 2005 as being simply to broker international discussion. It should rather provide leadership by promoting specific objectives and targets. In that light we would make the following recommendations: -

- The UK Government should commit itself to Contraction and Convergence as the framework within which future international agreements to tackle climate change are negotiated; and it should actively seek to engage support for this position during 2005 in advance of the next Conference of the Parties.
- Within the UNFCCC negotiating framework, the UK should press for a review of the adequacy of the commitments in the Convention, and focus its efforts on the need to agree more challenging absolute emission reduction targets within a post-2012 agreement.
- The UK should also actively pursue these objectives within the context of Commonwealth institutions where it could aim to promote a consensus with key nations such as India and Australia.
- In the context of the G8, the UK could pursue a broader range of complementary policies, including the need for greater coordinated effort low-carbon research, the scope for developing forms of international taxation, and in particular the need to embed environmental objectives more firmly within a range of international organisations.

102. We take issue with the Prime Minister's view, expressed in his recent speech at Davos, that science and technology provide the means to tackle climate change. Whilst we understand the desire to adopt such an approach in an effort to bring the US Government on board, it is simply not credible to suggest that the scale of the reductions which are required can possibly be achieved without significant behavioural change. In focussing on science and technology, the Government is creating the appearance of activity around the problem of Climate Change whilst evading the harder national and international political decisions which must be made if there is to be any solution.

103. In our view the challenge of climate change is now so serious that it demands a degree of political commitment which is virtually unprecedented. Whether the political leaders of the world are up to the task remains to be seen. Leadership on this issue calls for something more than pragmatism or posturing. It requires qualities of courage, determination and inspiration which are rare in peacetime. In according priority to climate change, the Prime Minister has set himself and his Government a mighty challenge and we must hope they rise to it.



Playing Dice - Simple but not easy

Emissions of greenhouse gases [GHGs] to the atmosphere are accumulating in there. Average global temperature is rising in response.

In the words of the US delegation chief at the Second World Climate Conference in Geneva in November 1990, "*That is is simple sophomore physics.*"

Continuing to raise the GHG concentration this way will raise temperature and damages further.

The solution is simple: - stop the emissions.

Doing this is not easy. However, the reasons for this are easy to understand.

1. The emissions come from the energy consumption that has under-written the growth of wealth and well-being for the last two hundred years.
People are not readily going to give this up.
2. That growth has been persistently asymmetric and conflict-ridden as a result.
Most people say, "when's it my turn?" and have real cause to.
3. The global nature of the problem requires a global solution to be effective.
The wisdom of Solomon - a C&C framework - is not in play right now.

This is partly because the relationship between emissions and concentrations is not well understood. Rising concentrations are a result of emissions *accumulating* in the atmosphere. So to stabilise the rising concentrations requires deep cuts in emissions: - to stop the bath from overflowing, the tap must be turned right off and quickly enough to prevent over-spill. In sum, success requires we solve the problem faster that we create it.

Enlightened self-interest is understanding precisely that, so as to avoid the worst of what lies ahead. Notions such as 'the best is yet to come' are not enlightened until affirmed as governed by that understanding.

Enlightened understanding is internally consistent and leads to a measured framework for shared action, the way sound leads to life and to music.

Contraction and Convergence is a simple 'musical' framework. It needs to be. While playing music is not that easy, it is impossible without the framework.

God does play dice, and it does sometimes get noisy.

But the thing is God also designed them.

He had to otherwise he couldn't play them.



“Contraction and Convergence” (C&C) is the policy framework proposed to the United Nations by the Global Commons Institute (GCI) since 1990. The purpose of C&C is to clarify and resolve the international diplomatic challenge of co-ordinating policies and measures at rates that avoid dangerous global climate change.

Based on the objective and principles of precaution and equity, as stated in the “United Nations Framework Convention of Climate Change” (UNFCCC), C&C proposes: -

A full-term contraction budget for global emissions that stabilises the atmosphere at an agreed concentration of greenhouse gases (GHGs).

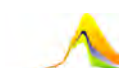
The international sharing of this budget as ‘entitlements’ resulting from a negotiated rate of convergence to equal shares per person globally by an agreed date within the full-term concentration agreement.

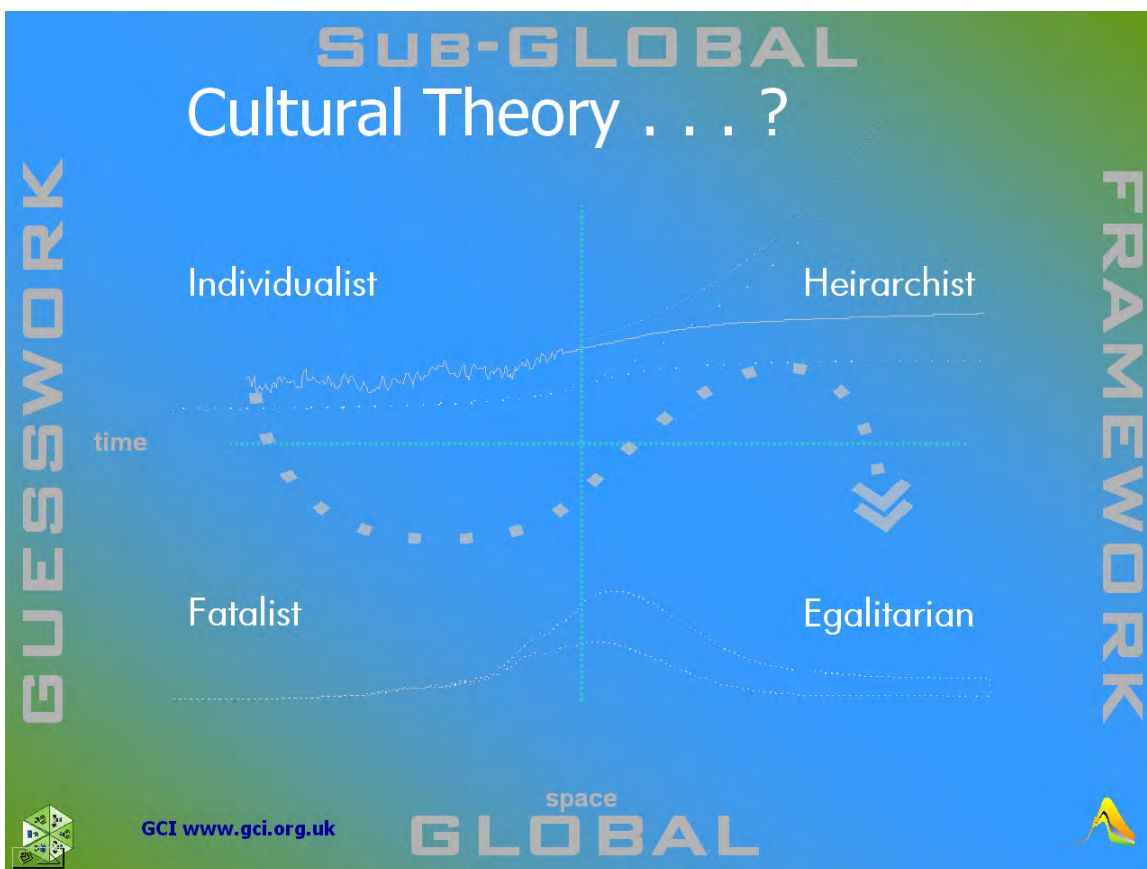
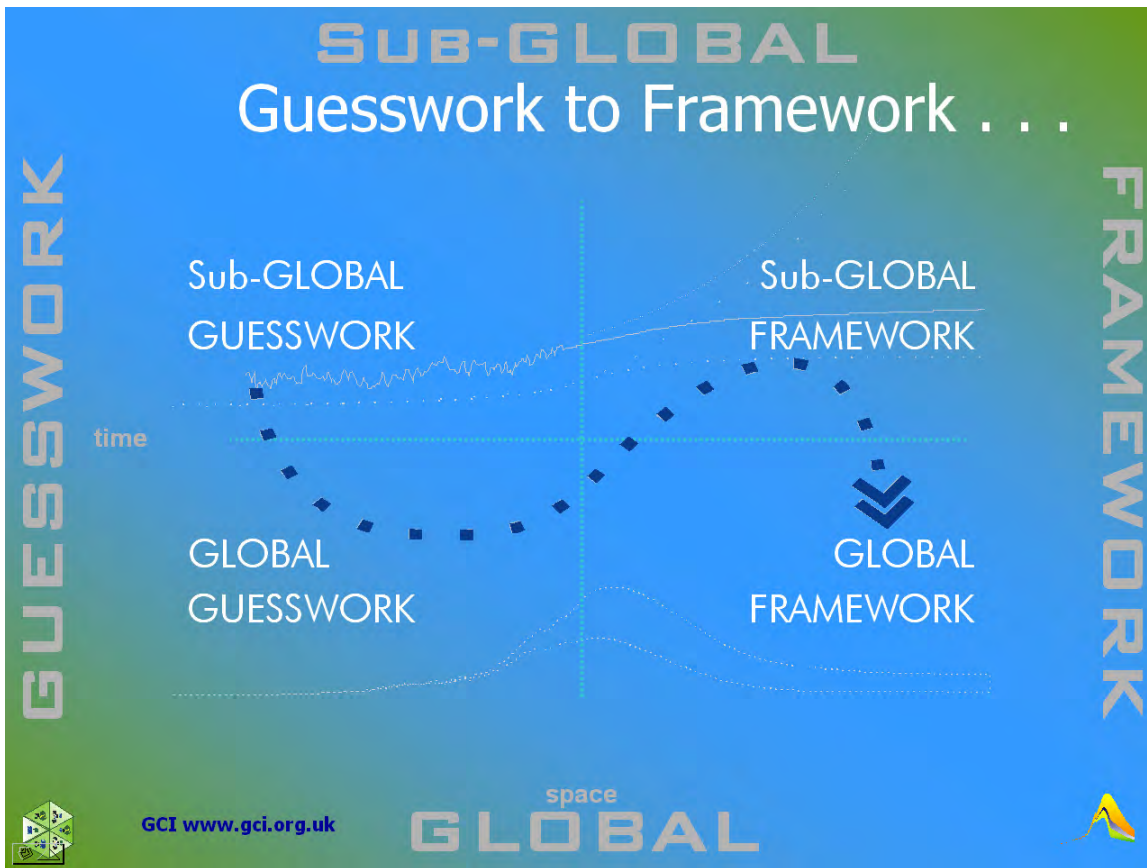
- The inter-regional, inter-national and intra-national tradability of these entitlements in an appropriate currency such as International Energy Backed Currency Units [EBCU]
- Improved understanding of the relationship between an emissions-free economy and concentrations, so rates of C&C evolve under periodic revision.
- GHG emissions have so far been closely correlated with economic performance. To date the growth of economies and emissions has occurred mostly in the industrialised countries creating recently a global pattern of increasingly uneconomic expansion and divergence (E&D) and international insecurity.
- C&C answers E&D in a ‘full-term’ constitutional, rather than a short-term random manner. It requires a progression from “Guesswork to Framework”. It enables the pre-distribution of future entitlements to emit GHGs that result from a rate of convergence deliberately accelerated relative to the overall agreed rate of contraction.

This synthesis can redress the dangerous trend imbalance. Built on global rights, resource conservation and sustainable systems, it is needed to guide the economy to a safe and equitable future for all. It builds on the gains and promise of the UN Convention and establishes an approach that is compelling enough to galvanise urgent international support and action.

Many of the parties to the UN Framework Convention on Climate Change (UNFCCC) already support C&C. The Africa Group proposed it to the UNFCCC in August 1997. It was the basis of the emissions trade debate in Kyoto.

Support for C&C grows steadily.





The presentation is a graphic animation at: -
[http://www.gci.org.uk/images/CC_Demo\(pc\).exe](http://www.gci.org.uk/images/CC_Demo(pc).exe)

1. Introduction

Dangerous climate change threatens human survival and the survival of all living things. Avoiding climate change involves establishing global rights.

In recognizing resource-constraints, the challenge is to establish and protect these rights in a constitutional – not a chaotic – manner.

In the private and public sectors and for the common good, C&C rises to this challenge. By recognizing “no equity, no survival”, a shift from the purely commercial guesswork of “efficiency with (no)-regrets”, to the constitutional framework of “equity and survival”, C&C is developing a future vision for the UNFCCC.

With present trends of “Expansion & Divergence”, we face an increasingly uneconomic growth. Reviewing this and economic ‘efficiency’, GCI’s presentation will propose a global-rights-based future in “Contraction & Convergence” (C&C).

We will demonstrate C&C’s principles and methods and highlight initiatives and support calling to C&C to become the basis of negotiation at the UNFCCC.

2. ‘Guesswork’ to ‘Framework’

Progression to C&C

These images illustrate a progression in space and time from ‘Guesswork to Framework’, or a ‘globalisation of consciousness’.

The progression along the dark blue dotted line with the arrow-head is defined through the quadrants created by intersecting axes from ‘sub-global’ (or local) to ‘global’ . . . and from: ‘guesswork’ to ‘framework’.

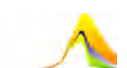
The left side of the graphic represents the past. The right side represents the future, with and/or without C&C.

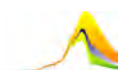
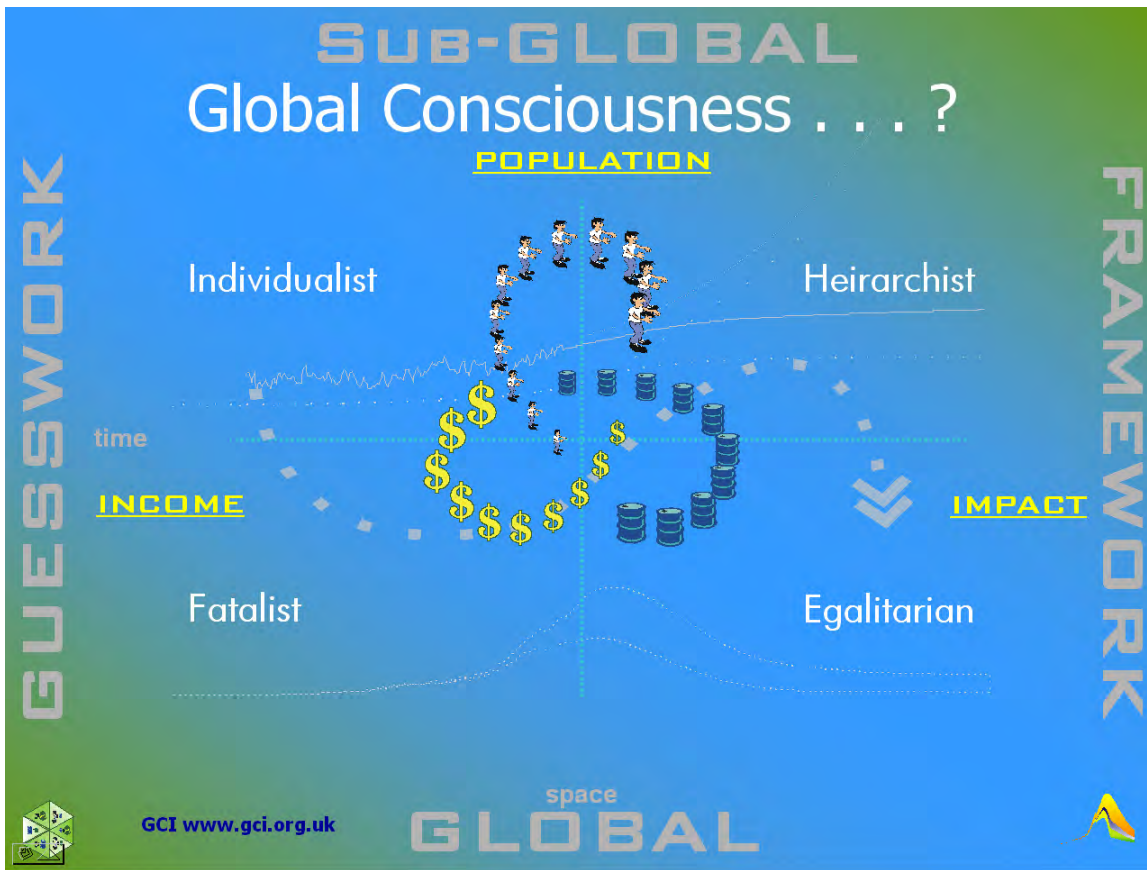
Progression as Cultural Theory

This suggests the same progression to the globalisation of consciousness but through the world-views of cultural theory:

- Individualist or ‘predator’, in tactical conditions of ‘local guesswork’
- Fatalist or ‘prey’, resigned in a state of global ‘che sera sera’
- Heirarchist or ‘mediator’ with ‘sub-global policy frameworks’
- Egalitarian or ‘sage’ seeing ‘conception-constitution’, or ‘global framework’.

This is a progression taking local competitive autarchy into constitutional democracy and then global governance under precautionary limits to global GHG emissions.





Global Consciousness

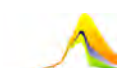
This suggests the relationships between:

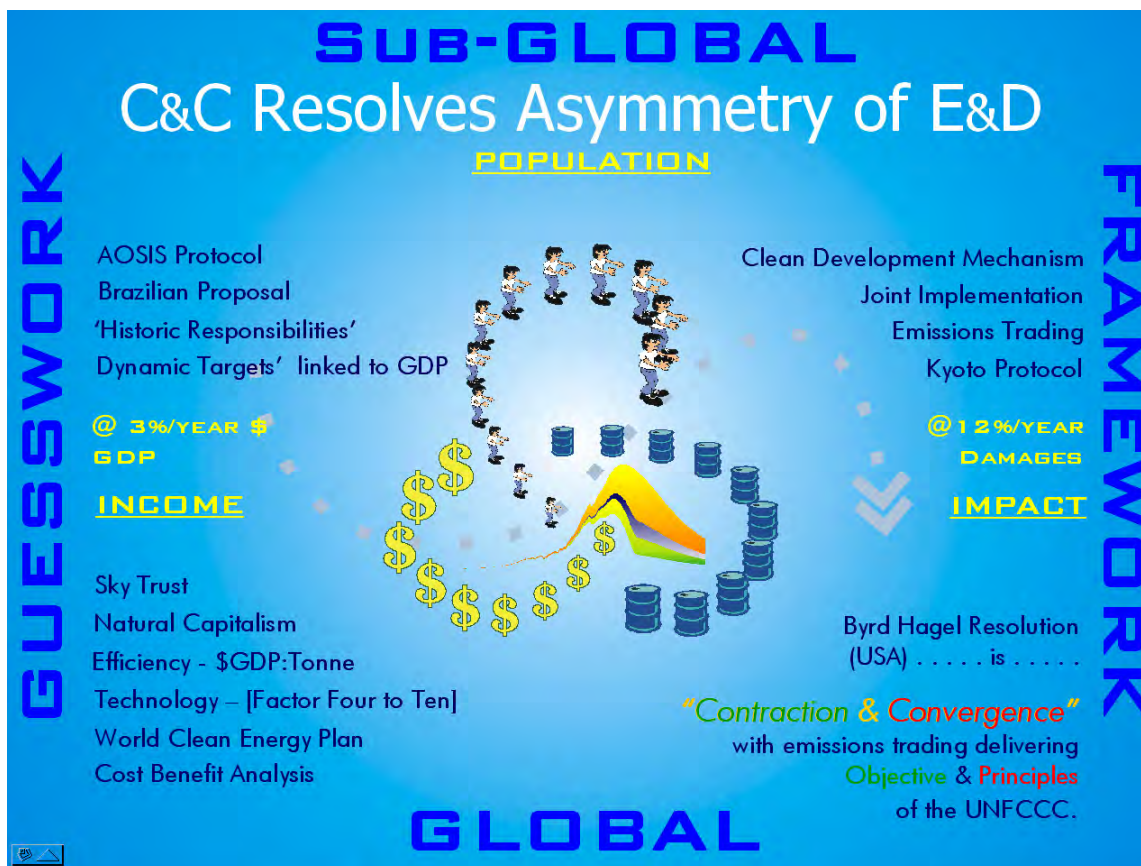
- POPULATION [Predator/Prey/Mediator/Sage]
- INCOME, or 'goods' (\$=production)
- IMPACT, or 'bads' (oil-barrels=pollution)
- Rising temperature ('flow' or rates of change)
- Rising atmospheric GHG concentrations, ('stock' or accumulations) moving in opportunity space-time, from short-term individualistic guesswork to a full-term egalitarian global framework for survival.

The IPCC and "C&C"

The Intergovernmental Panel on Climate Change (IPCC) has so far produced three "Assessment Reports". The: -

- First Assessment Report (FAR - 1990) established the scientific basis for human-caused climate change
- Second Assessment Report (SAR - 1995) recognised the asymmetric human causation and effects of climate change
- Third Assessment Report (TAR - 2001) recognised C&C as, "taking the rights-based approach to its logical conclusion."





The UNFCCC and "C&C"

A secure future depends on avoiding dangerous climate change. This depends on stabilising rising GHG concentrations in the atmosphere by reducing dependence on greenhouse gas emitting sources of energy such as fossil fuels coal, oil and gas.

Between 1990 and 1992, the United Nations Framework Convention on Climate Change (UNFCCC) was created for this purpose. The science is already clear enough for us to know now that when dangerous climate change has been avoided, firstly, a global contraction of greenhouse gas emissions by 60 to 80% of current output in some time frame will have been completed, and secondly, an arranged international convergence of tradable shares in this contraction will also have occurred within the framework of the UNFCCC. Finally, this process will also have resolved the existing asymmetric trends of international "Expansion & Divergence".

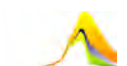
In December 2003 at COP-9 to the UNFCCC, the secretariat took the position that: -

"realizing the objective of the Convention inevitably requires 'contraction and convergence'."

Kyoto, Byrd Hagel et al and "C&C"

C&C is required by definition, and failure is not an option. C&C simplifies and synthesizes key issues in the global diplomatic effort and makes an effective compromise achievable. Resisting this before the fact increases the likelihood of failure. Recognising this before the fact increases the chances of success.

Hence, all efforts at the UNFCCC, such the Kyoto Protocol, JI, CDM, renewable-energy-development, efficiency-gains, emissions trading, sink protection and the US Byrd Hagel Resolution are already shaping the UNFCCC into the "United Nations Framework Convention for Contraction & Convergence".



Economy - Basic Features

PEOPLE  (Population)

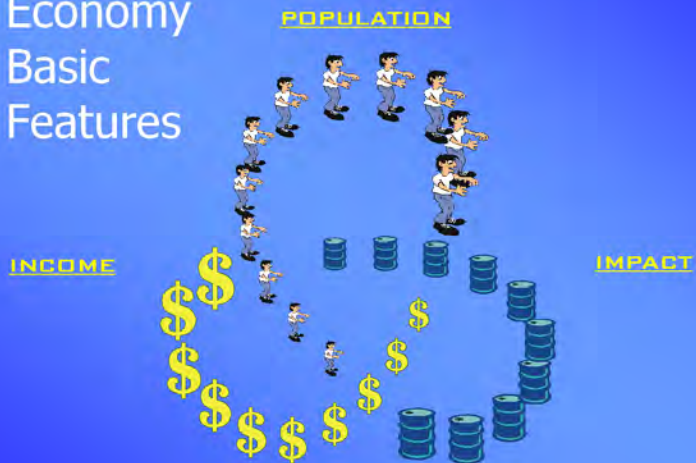
INCOME  (Production)

IMPACT  (Pollution)

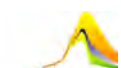


..... ALL GROWING

Economy Basic Features



Economy - Basic Relationships



3. Basic Climate Economy

a. Stock

Here are the basic features:

- Population
- Production
- Pollution (tonnes of carbon) from CO2 emissions from fossil fuels burning

b. Flow

These are growing and feeding back onto the system as a whole as "Expansion & Divergence".

In 2000, Davos CEOs called the rise in GHG emissions, concentrations, temperature and damages, "the devastating trends of climate change". Understood as "Expansion and Divergence", they had good reason to ask, *"Why had more not been done to avert them?"*

c. Relationships

Here are the three basic features of the climate economy:

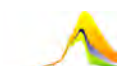
- High to low dollars per tonne EFFICIENCY
- Low to high dollars/capita INCOME
- Low to high tonnes carbon/capita IMPACT

d. Wealth versus Efficiency

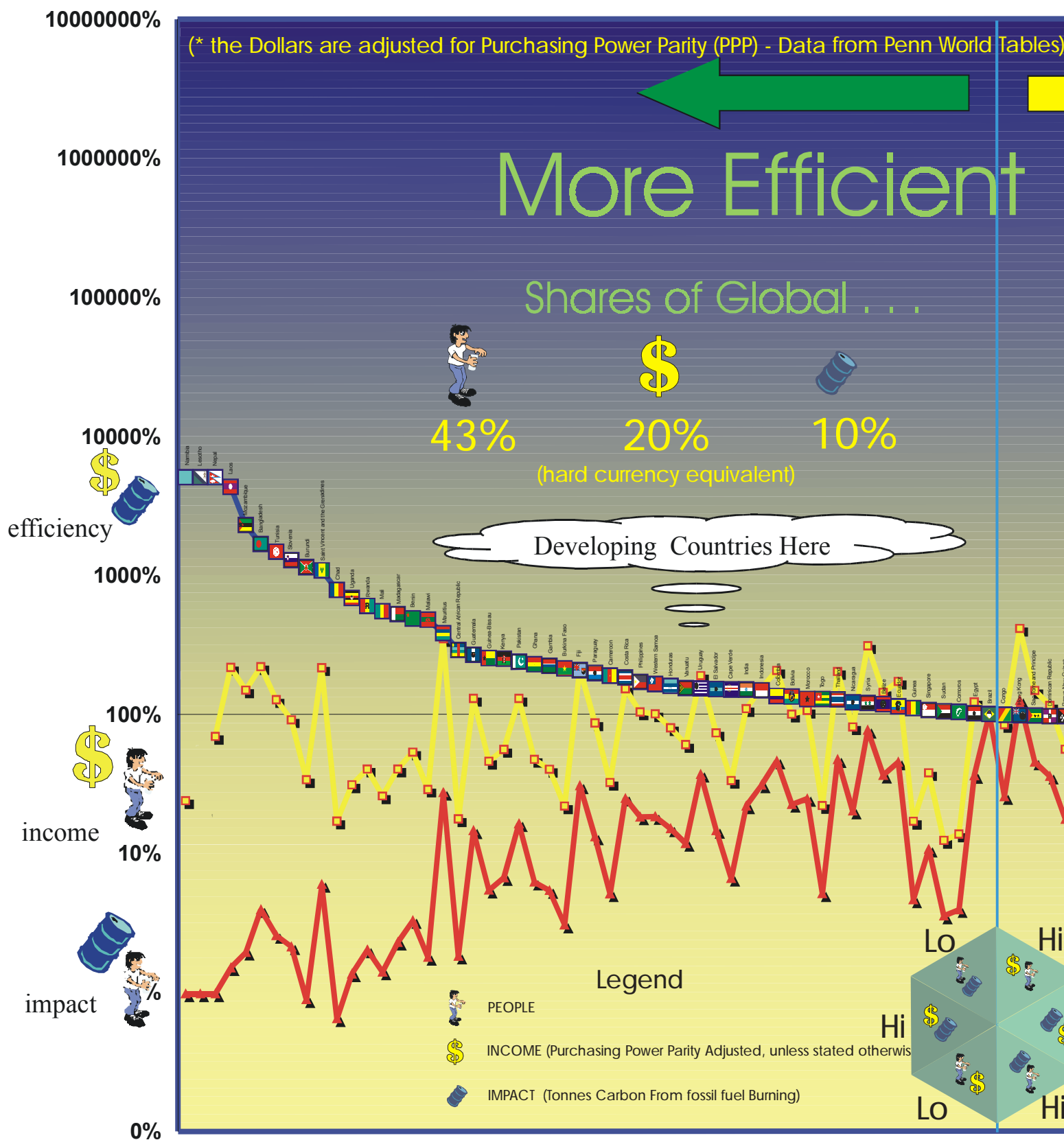
Here are the three basic features of the climate economy assessed for 140 countries for the year 1990. When the income is measured in local purchasing power, the inverse relationship between wealth and efficiency is clear; where per capita INCOME and IMPACT are low there is a high EFFICIENCY value. Conversely, where per capita INCOME and IMPACT are high there is a low EFFICIENCY value.

Six example countries from high efficiency to low efficiency are shown with their flags: Nepal; Benin; India; Brazil; China; UK; USA. On present values and at present rates of change, the USA might be as efficient as Nepal by 2100.

[See chart pages 16 and 17].

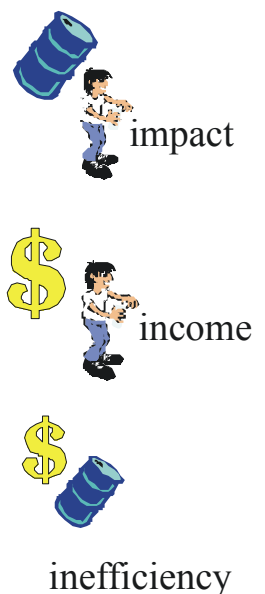
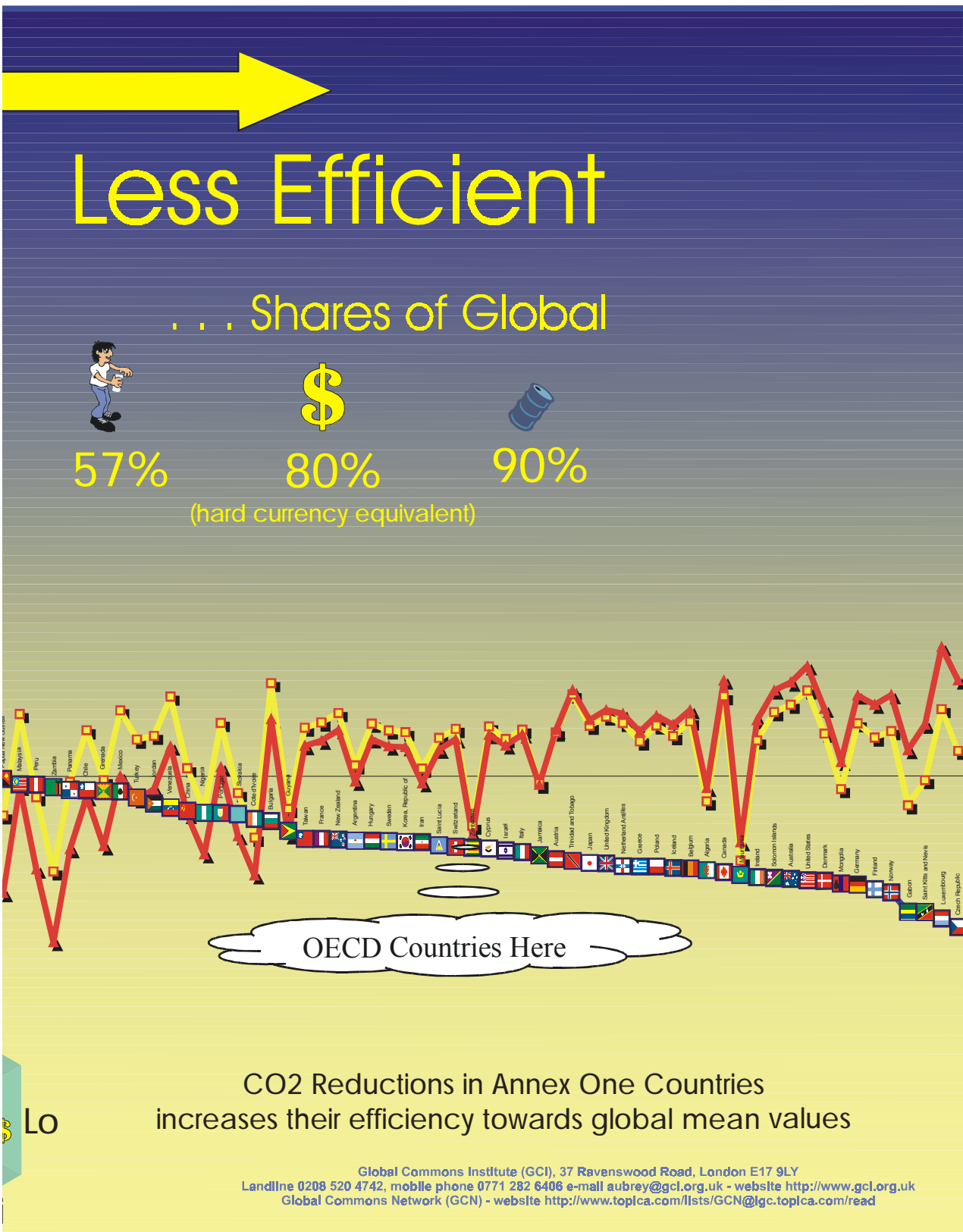


\$s*/tonne carbon EFFIC



This graphic compares the dollar/tonne "EFFICIENCY" of various countries. The Dollars (INCOME) are adjusted to "Purchasing Power Parity" (PPP). The INCOME per capita is shown on the yellow line. EFFICIENCY is the ratio between INCOME and IMPACT and The trend in the graphic shows that poor countries

EFFICIENCY RANKINGS for 1990



"EFFICIENCY" for 120 countries in 1990.

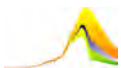
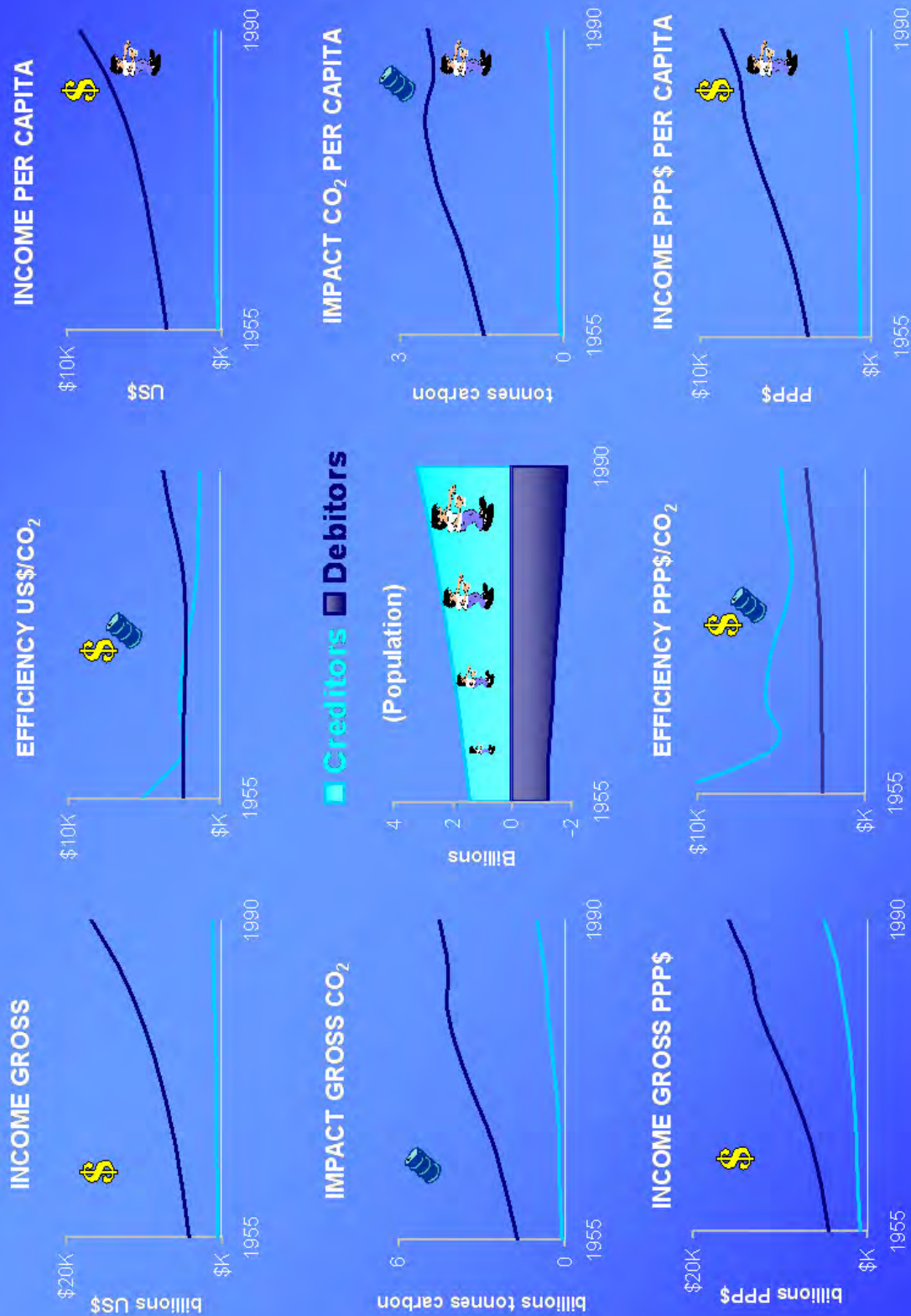
Tonnes (IMPACT) are of carbon from CO2 from fossil fuel burning.

IMPACT per capita is shown on the red line.

international rankings are shown in the line of flags.

are much more efficient than rich countries.

Trends of Expansion & Divergence



4. "Expansion and Divergence"

This shows global gross and per capita "Expansion and Divergence" in currency with and without exchange rate corrections (Purchasing Power Parity or PPP) INCOME and CO2 IMPACT between 1950 and 1990. Similarly, efficiencies are shown as US dollars & PPP dollars per tonne carbon.

The global average US dollars per tonne carbon from fossil fuel burning in 1990, for example, was around \$3,000 per tonne. The average per capita carbon usage for stable atmospheric concentration was 0.4 tonnes per person per annum. This was converted into a figure for "Sustainably Derived Income" (SDI) reducing the \$3,000 by 60%.

While this global SDI was \$1,200 per person per annum, national SDI totals were obtained by multiplying that figure by each country's population for that year. These figures were then compared with each nation's US dollar and PPP dollar equivalent income (GDP) to give a "debit" or "credit" figure. Debit here means in any year the amount by which a nation exceeded its SDI total. Credit means in any year the amount by which a nation fell short of its SDI total. "Debitor" means in any year the total number of people in those nations that took more than their equitable share of SDI globally. "Creditor" means in any year the total number of people in those nations that took less than their equitable share of SDI globally.

To reveal the trends this was calculated for each year 1950 to 1990.

The trends show the sum of countries that were; "creditors" and "debitors" in each year; their respective gross and per capita Impacts; their respective gross and per capita Incomes in \$US and \$PPP; their respective Efficiency trajectories in \$US and \$PPP. For simplicity the two aggregated groups of countries were shown as "creditors" and "debitors".

As the image shows, when all data for all these years is analysed this way the trends that emerge are devastating, "Expansion and Divergence".

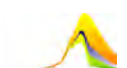
This is sometimes referred to as the 'ecological debt'.

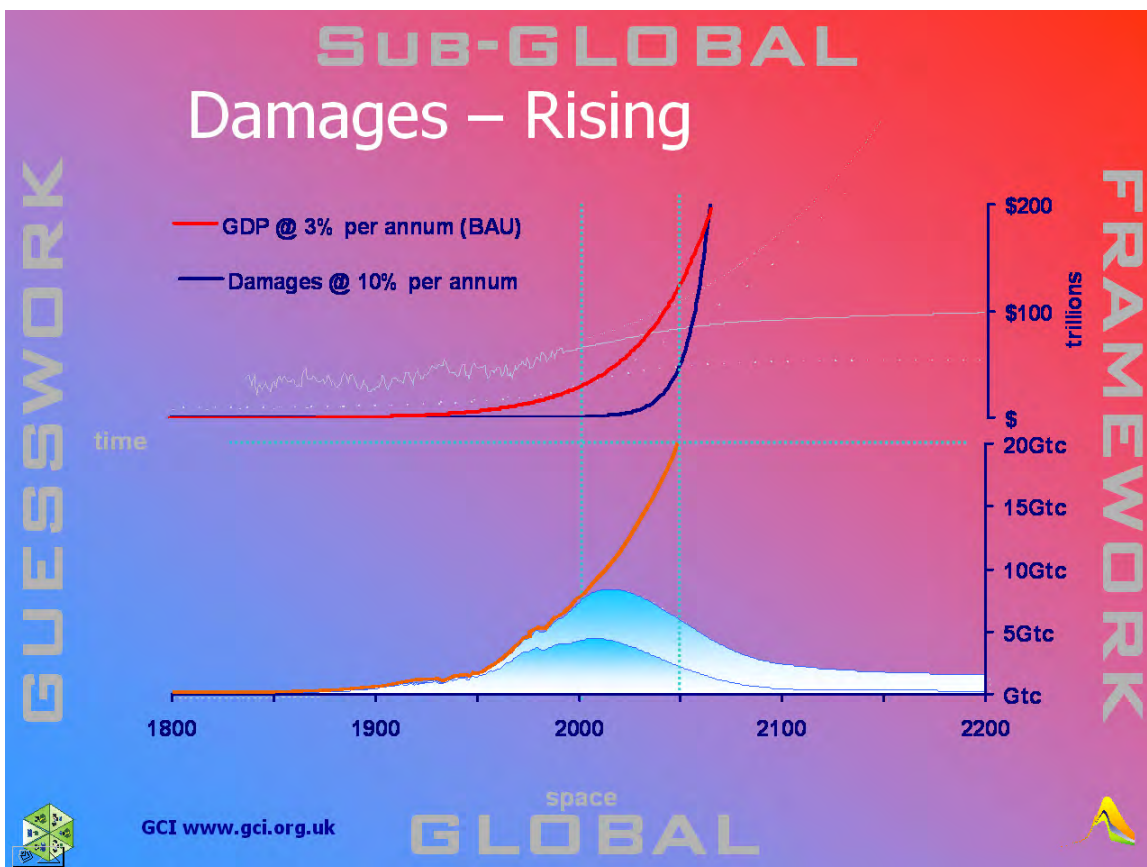
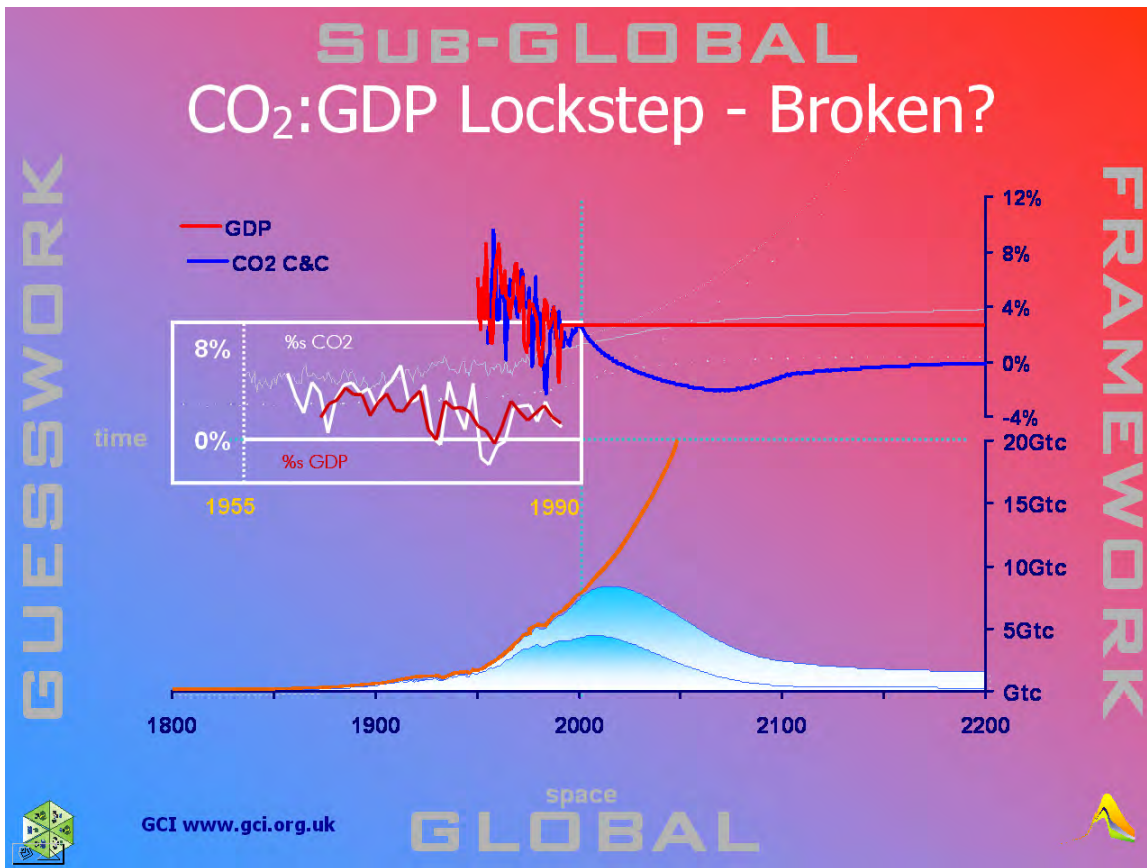
With the climate already changing, this emphasizes the requirement for "Contraction and Convergence".

For detailed information see:

"The Unequal use of the Global Commons" 1994 pages 183 - 197 in UNEP/IPC, "Equity & the Social Considerations of Climate Change" ICIPE Science Press Nairobi, ISBN 9290640847

"Contraction and Convergence - the Global Solution to Climate Change", Schumacher Society/Green Books 2000 [Meyer] ISBN 1 870098 94 3 <http://www.greenbooks.co.uk/cac/cacorder.htm> Breaking the GDP:CO2 "Lockstep"





a. Breaking the GDP:CO2 “Lockstep”

During these same past four decades (1950 until 1990), the output of CO2 and of GDP from global industry have been correlated at nearly 100%.

This is known as ‘lockstep’ (Detail in Landscape White Box in Slide).

To maintain both growth and a safe climate, breaking this CO2:GDP lockstep is essential.

Here, GDP is projected at 3% a year, and CO2 goes to minus 2% a year, (here following the retreat from fossil fuel dependency shown in the C&C formation below to limit CO2 concentrations to 70% above the pre-industrial level).

Unless we break the lockstep and correct the asymmetric trends of carbon dependency, the prospect of dangerous climate changes and damages will become inevitable.

b. Damages

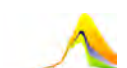
Past damages here are ‘uninsured economic losses’ estimated by Munich Re for the last five decades. They relate to “Great Weather Disasters”, these exclude the associated mortality. Gross World Product over the same decades has been at 3% a year. The trend of the growth rate for damages over this period has risen at an average of around more than twice that a year. This means that – albeit from a low-based figure – damages have grown at around three times the rate of the economy.

If these global trends are projected on the back of emissions Business-as-Usual (BAU), damages appear to exceed GDP by 2065. This is clearly unsustainable. If we take this path towards this future climate, the risks – let alone the damages – will soon rise beyond the capacity of the insurance industry and even governments to absorb. It is certain that damages will rise for the century ahead even with emissions contraction. However, this rate can be reduced proportional to the rates of a negotiated framework of C&C.

The emissions portrayed show a contraction of 60% by 2100. The difference between BAU and C&C is the difference between continuing the chaos prefigured in these data below or organising around the committed purpose of avoiding it.

Great Weather Disasters - (Munich Re-Insurance/UNEP 2001 - \$s Billions.)

	1950s	1960s	1970s	1980s	1990s
Events	13	16	29	44	72
Damages	\$40	\$52	\$76	\$121	\$410



RESTART

NEXT:

NOTES

Contraction

Convergence

Science Update

*Technological
Carbon Fixing*

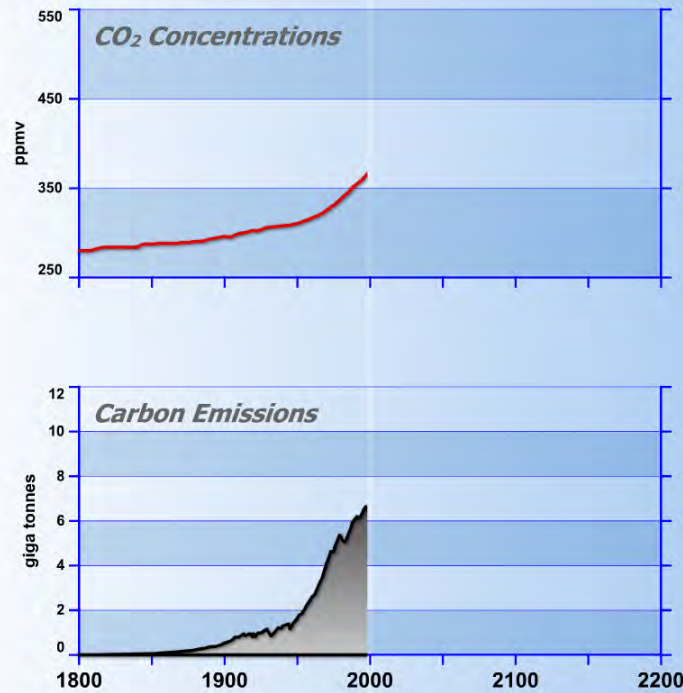
*Oil & Gas
Depletion*

*Clean Energy
& Efficiencies*

*Growth &
Damages*

Implementation

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RESTART

NEXT:

NOTES

Contraction

Convergence

Science Update

*Technological
Carbon Fixing*

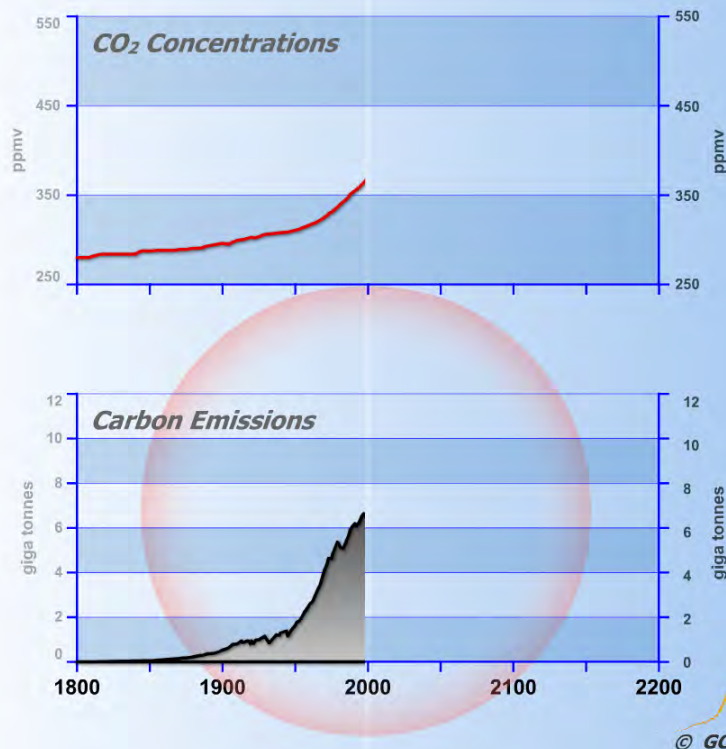
*Oil & Gas
Depletion*

*Clean Energy
& Efficiencies*

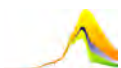
*Growth &
Damages*

Implementation

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5 “Contraction and Convergence”

a. Historic CO2 Emissions

Industrialisation, achieved largely through the burning of coal, oil and more recently gas for energy, started at the beginning of the 19th century. From this, greenhouse gas emissions (GHGs) – predominantly carbon dioxide (CO₂) – to the global atmosphere have been rising at an average growth rate of 2 to 3 % per annum.

The record of CO₂ emissions has been reconstructed by the Carbon Dioxide Information Analysis Centre (CDIAC) of the US Energy Department, Oakridge, Tennessee.

Weighing only the carbon from these emissions, this graph shows these emissions as a global total. Starting at around zero in 1800, the annual output had risen to 6.5 billion tonnes (GigaTonnes carbon or GTC) by the year 2000.

Reflected as a dip in global emissions, the great depression can be clearly seen, just after 1930, as can both World Wars and the oil shock in the early 70's.

b. Historic Atmospheric CO2 Concentrations

During this 200 hundred year period, atmospheric concentration of CO₂ rose by over 30%, from 280 parts per million by volume (ppmv) to over 360 ppmv. The rise is explained by the partial and increasing inability of the terrestrial and oceanic biosphere to 'recapture' this extra 'emissions-led' atmospheric CO₂. Plant growth, despite the fertilization effect of more CO₂ in the atmosphere, cannot keep up with the carbon pulse from fossil fuel burning.

This CO₂ concentrations data is also from CDIAC . There are various points around the world that are now regularly sampled for rising atmospheric CO₂ concentration. The sampling from all sites tallies very closely, as the atmosphere is a nearly perfect 'mixer' of the GHGs. Recent data shown here is from the site in Mauna Loa.

Not shown here however, are the 500,000 years prior to industrialisation. During this period, we know from the ice-core sampling at the Vostok site in Antarctica, that atmospheric CO₂ content varied between no more than 180 and 280 ppmv. This is true even during and between several ice ages that occurred Throughout this period.

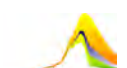
This means that the rise in CO₂ concentration since 1800 is faster and higher than anywhere in the historic record of the last half a million years, and linked for the first time to human behaviour.

c. Navigation Ping

“Where are we going?” The central question posed in this 'radar' image is, what level of atmospheric CO₂ concentration should be considered as the maximum beyond which 'dangerous' rates of climate change become unavoidable?

The GHGs are called 'greenhouse gases' because they naturally trap heat. Their tri-atomic structure is excited by radiation in the infrared part of the spectrum. This simple physics means that the higher the GHG concentration in the global atmosphere increases, the more heat will be trapped.

Since 1990, natural and social scientists have been alerting the world to the dangers of continuing deeper into these trends of rising emissions, atmospheric concentrations, temperature and consequential damages.



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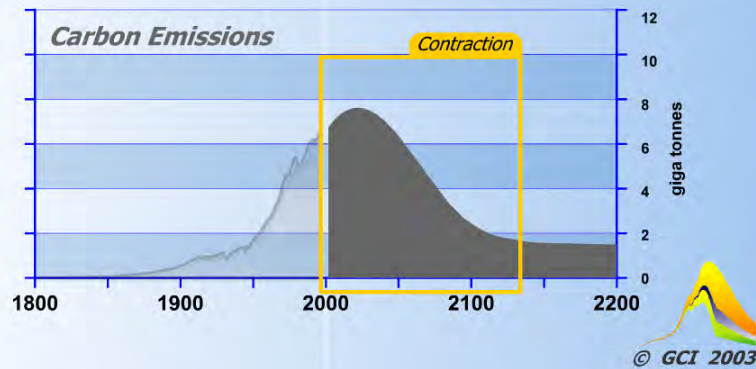
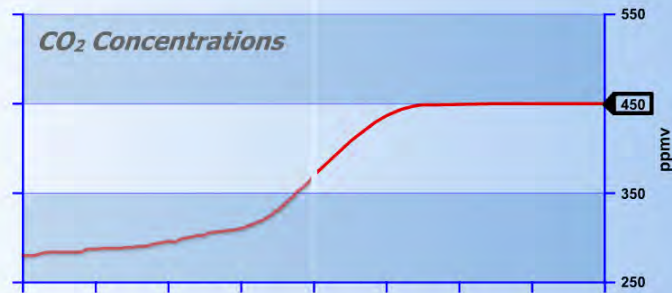
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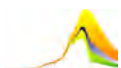
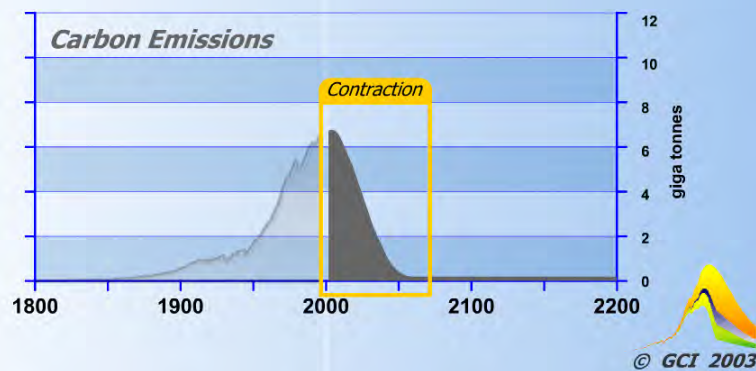
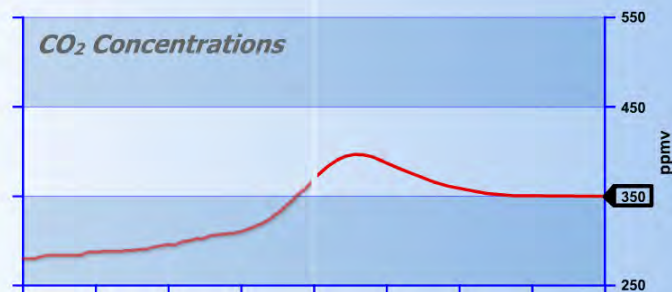
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At the Rio Earth Summit in 1992, the “United Nations Framework Convention on Climate Change” (UNFCCC) was tabled and signed by most countries of the UN. The objective of the UNFCCC is to stabilise atmospheric GHG concentration below a ppmv value that makes ‘dangerous’ rates of climate change unavoidable. Climate scientists are in agreement that:

- The higher the ppmv value, the greater the risks
- Whatever the value, an ultimate global contraction of emissions in the order of 60 to 80 % of 1990 emissions levels is required to achieve this, as concentrations are ‘cumulative’ emissions

GCI suggests that it is imprudent to contemplate ppmv levels above 450 ppmv CO₂.

Our reference case – 450 ppmv – is not because we believe this value is safe, but because we believe it should be central when comparing ‘more with less dangerous’.

The challenge, “Where are we going?” embeds the question, “what is the basis of organising to meet this challenge; is it to be a precautionary and directional framework, or is it – as some argue – to be merely the sum of aspirational guesswork?”

This challenge is the greatest that humanity has yet faced.

6. “Contraction & Concentrations”

a. Contraction for Concentrations at 450 ppmv

This image shows the volume of CO₂ emissions over the next 100 years that is consistent with stabilising atmospheric CO₂ concentration at 450 ppmv, as published by the scientists of the Intergovernmental Panel on Climate Change (IPCC) in 1994.

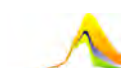
The yellow box around emissions stresses that we call this event as a whole ‘contraction’, whatever the values chosen.

b. Contraction for Concentrations at 350 ppmv

This image shows the volume of CO₂ emissions over the next 50 years that is consistent with stabilising atmospheric CO₂ concentration at 350 ppmv. Note that due to the ‘cumulative’ effect of emissions, values below 400 ppmv can only be achieved after peaking at that value and returning to 350 ppmv.

c. Contraction for Concentrations at 550 ppmv

This image shows the volume of CO₂ emissions over the next 150 years that is consistent with stabilising atmospheric CO₂ concentration at 550 ppmv. In each case, whatever concentration level is selected (in ppmv), it requires a full-term contraction event to achieve it.



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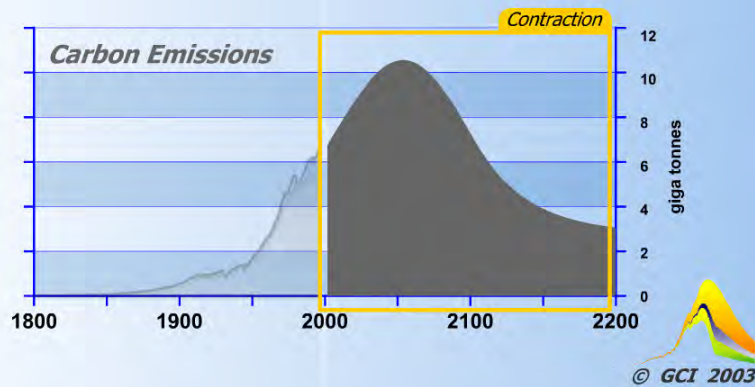
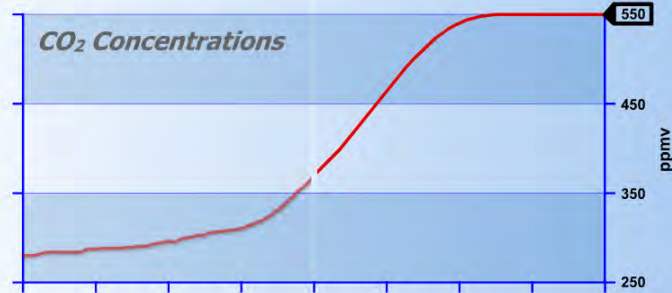
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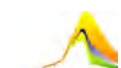
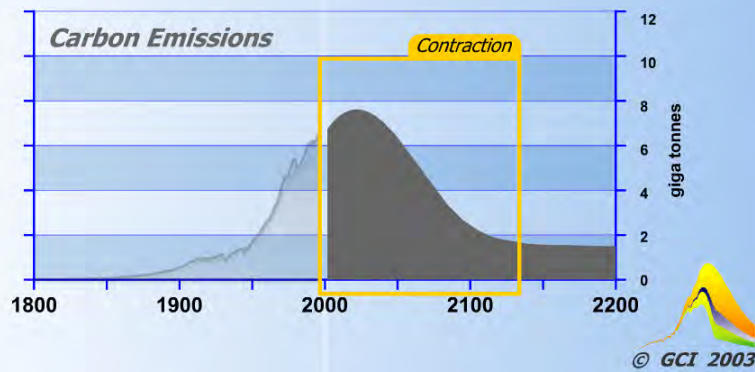
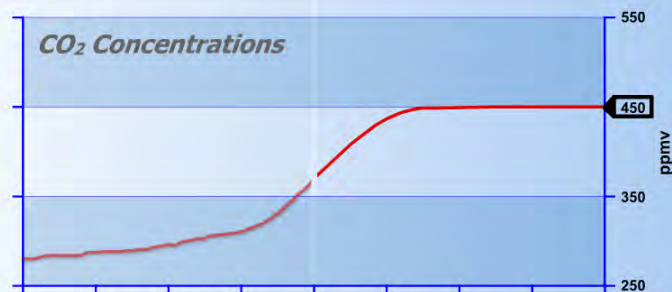
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7. Scenario of Future Negotiation

As the world considers the rate and extent of the contraction event required to avoid dangerous climate change, the issue of how to share and manage the event internationally has tested the analytical and negotiating skills of the professionals and experts to deadlock and even breaking point. The conflicts of interest and culture are very great.

From the outset GCI has always taken the view that:

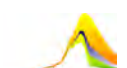
- The USA has always been correct in asserting the need for global arrangements, as for example in the Byrd Hagel Resolution of the US Senate in June 1997
- The rest of the world has always been right as well in asserting the need for 'differentiated responsibilities' in relation to the contraction event.
- The task of negotiating our collective avoidance of dangerous climate change is highly charged because of at least four principal issues:
- As the chart on page [Insert here the page number for the full page version of image file GCI_10] shows, CO2 emissions remain almost perfectly correlated with economic growth at this time
- As the chart ahead shows, until now, 80% of the historic accumulation of 'extra' GHG emissions in the atmosphere is the responsibility of the so-called industrialised and 'wealthy' countries of the North (this is often referred to as 'historic responsibility' and even 'historic debt')
- The impacts of changing climate are already being felt around the world and the trend is persistent, iterative, cumulative and accelerating
- The much less wealthy but more vulnerable countries in the so-called 'developing world' of the South are most exposed and least equipped to cope.
-

In the following slides we demonstrate the rationale for Contraction with Convergence at rates that absorb the historic debt and avoid climate-disaster.

Taken as a whole, C&C unifies the key elements of the increasingly stochastic process at the negotiations and makes the rights-based precautionary principle of the UNFCCC into a numerate and stable procedure.

While rates of this procedure are negotiable, and also revisable, C&C's principled framework-structure is constitutional, and remains constant.

We judge that only as such, can the asymmetric trends of "Expansion and Divergence" be sufficiently corrected and the emerging markets in technology conversion be sufficiently guided so that North-South co-operation for the safety of this and future generations will be successful.



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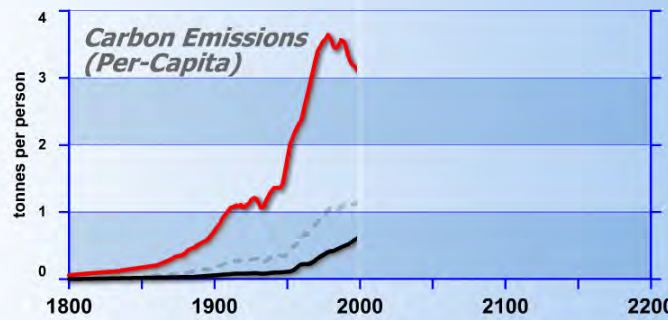
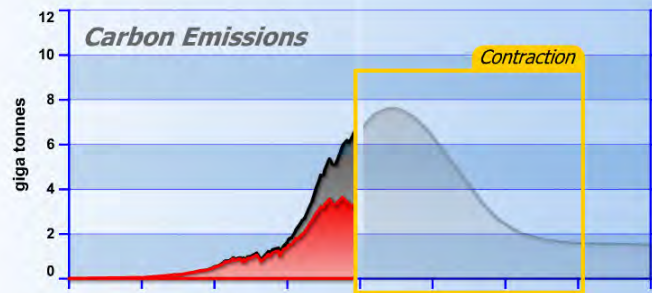
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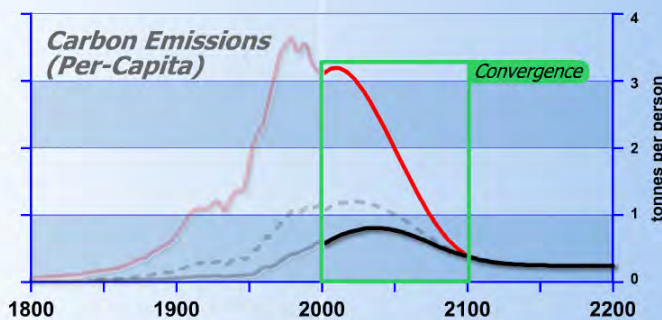
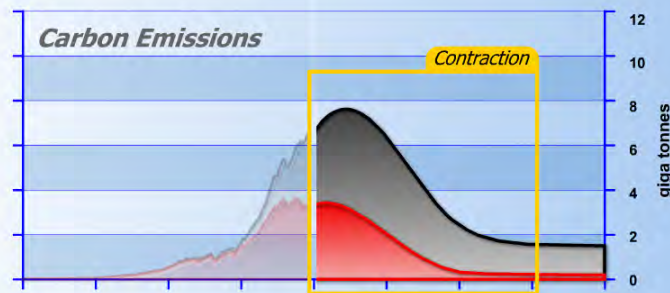
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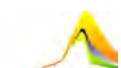
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a. The "Expansion and Divergence" of Historic Emissions

Population growth matched the growth of the economy and its emissions very closely since the onset of industrialisation.

This image shows that global per capita emissions average rose from zero in 1800 to around one tonne per person per annum by the year 2000.

The C&C model has population, concentration and emissions data for all countries for all years shown. However, to keep this exposition simple, we show the world sub-divided into two regions:

- The Industrial country group in Red
- The rest of the world in Black.
- Over the period as a whole:
- The red group has emitted over 80% of the emissions, as a cumulative total, and had emissions per capita well above the global annual average (the dotted line in the lower chart)
- The black group has emitted under 20% of the emissions total and had emissions per capita well below the annual global average.

This is "Expansion and Divergence".

Since rising atmospheric concentrations are a function of accumulated emissions, and emissions are proportional to GDP, this comparison is the basis of demonstrating the so-called "ecological debt" of the North to the South.

For a full discussion of this issue see, "Climate Change, Population and the Paradox of Growth" GCI 1992, published in Spanish in *Medi Ambient i Cultura* num. 5, Dept. de Medi Ambient de la Generalitat de Catalunya, Barcelona, in April 1993.

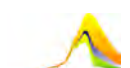
b. The "Contraction and Convergence" of Future Emissions

Here we have 'frozen' the population data at c. 6 billion people in the year 2000 and then shown the declining future per capita average for carbon consumption as determined by the contraction event in the yellow box above.

This image takes the argument one step further and shows the declining future per capita average for carbon consumption as determined by the contraction event in the yellow box above.

This slide highlights that the 'convergence' aspect of the 'contraction' event is what is contained in the green box; here between 2000 and 2100.

The next sequence shows different rates of convergence within the same rate of contraction.



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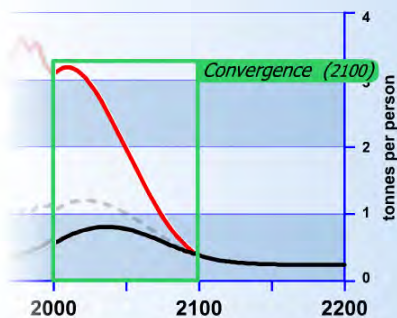
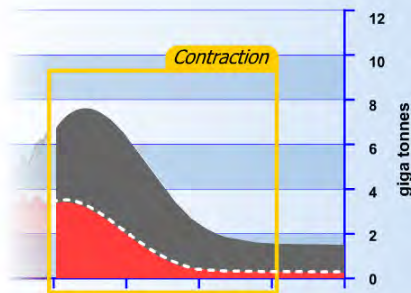
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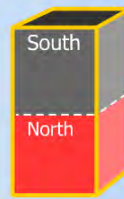
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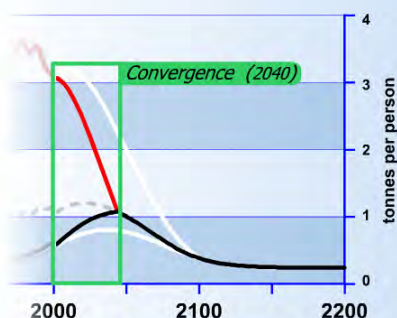
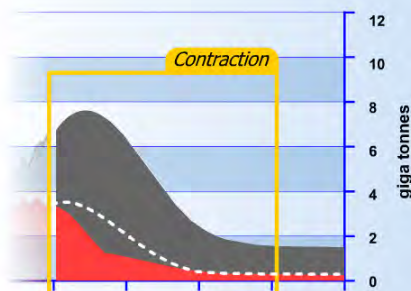
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c. Negotiable Rates of Convergence

These slides highlight that the per capita 'convergence' aspect (highlighted in the green box) of the 'contraction' event can be negotiated so that it is accelerated relative to the global rate of contraction. This feature provides a mechanism whereby developing countries can argue for a resolution of the 'historical debt'.

With a constant contraction event aimed at a concentration stabilisation of 450 ppmv, here are three different rates of convergence.

This feature proposes a method for tackling the central challenge to actors, analysts and negotiators involved in the climate negotiations; how to negotiate shares in the global retreat from fossil fuel dependency (the contraction event) in an effective, inclusive and non-random manner.

This feature of the C&C method is what we call "accelerated convergence" or more precisely, "convergence accelerated relative to the rate of contraction".

This feature is central to the case for C&C.

This procedure demonstrates that:

- The faster the convergence upon the global per capita average is, relative to a given rate of global contraction, the greater is the future share of the contraction event that is assigned to the South as 'entitlements'.
- The slower the convergence upon the global per capita average is, relative to the same given rate of global contraction, the greater is the future share of the contraction event that is assigned to the North as entitlements.

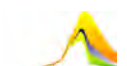
Whatever rates of C&C are considered, the per capita entitlements created this way are scarce and valuable and, subject to appropriate rules, necessarily tradable.

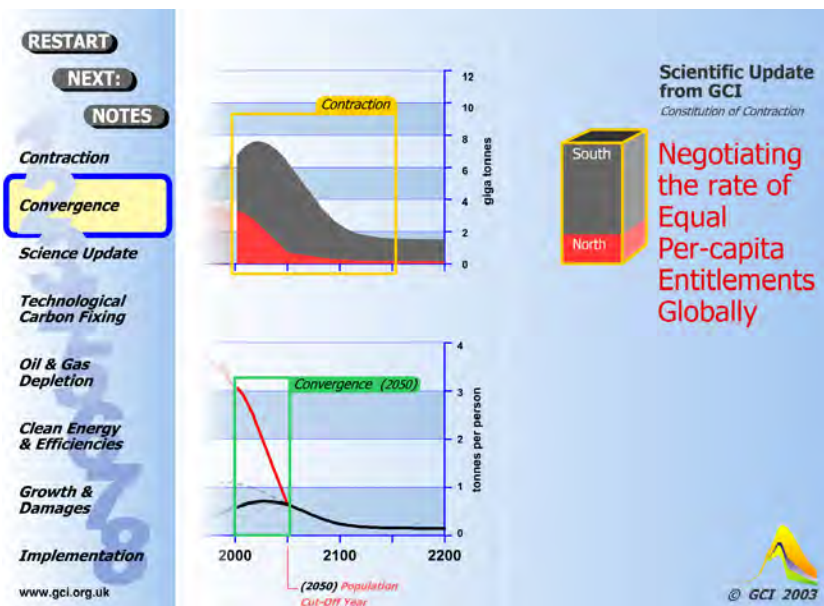
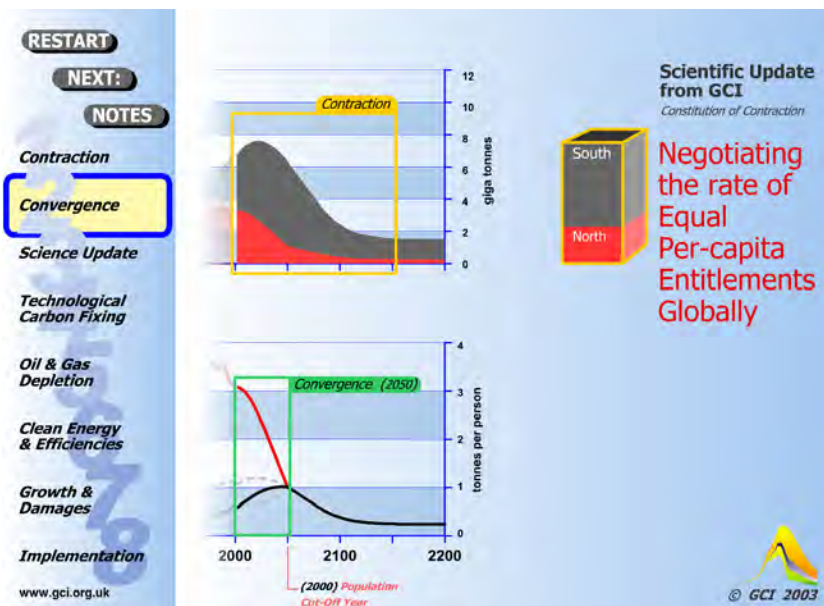
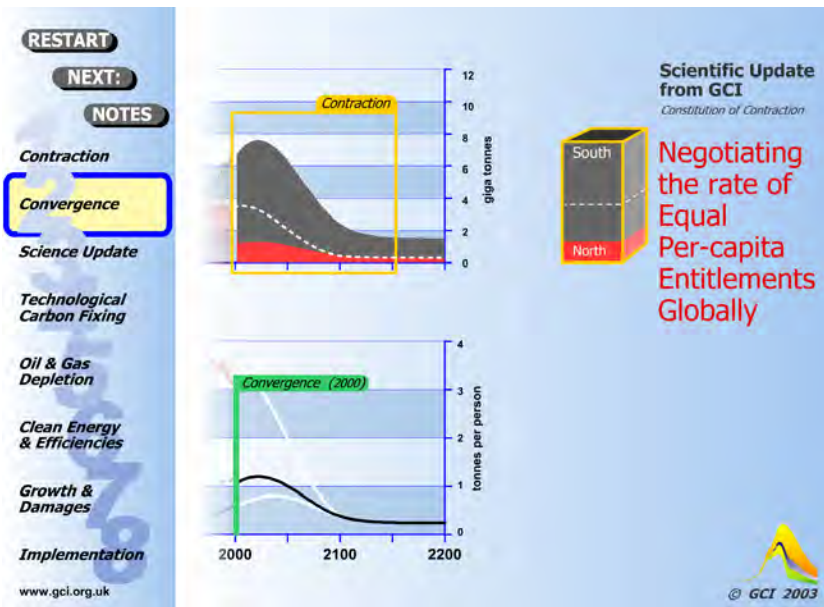
This is "the whole-truth of tradable entitlements" and is globally viable. Remaining stuck in "the half-truth of randomly generated tradable commitments" (as at present) is not. This mechanism is the key to resolving the North/South standoff that has bedevilled negotiations at the UNFCCC for the last fifteen years over the historic debt and meaningful participation.

The past shares in the "expansion and divergence" phase of fossil fuel dependency (albeit unplanned) obviously favoured the rich countries of the North at the expense of the poorer countries of the South (albeit unknowingly). This asymmetry shows the globally polarised economic conditions that face humanity as we contemplate the rising opportunity cost to all of us of unresolved climate change.

The moral case for tackling this asymmetry in a systematic way is self-evident. The logical case for doing this is yet more compelling. Failure is not an option. Moreover future international shares in the contraction event must be determined in advance of any international trading of these shares by definition, as you cannot trade what you do not own.

The constant white dotted line separating the Red Northern and Black Southern shares is deliberately placed as a marker to show the increase in the Southern share as convergence is accelerated relative to contraction.





The key point is that shares in the budget, or initial purchasing power in the global carbon market, can be pre-distributed by convergence accelerated in favour of the South as a way of making the overall arrangement inclusive and effective.

With emissions trading absorbing the difference, entitlements could be the result of convergence by 2030 for example, while actual emissions could retreat at rates similar to those determined by convergence by 2100 (the white dotted line).

The demonstrations include the same convergence argument at a faster rate of contraction (for 350 ppmv) and a slower rate (for 550 ppmv).

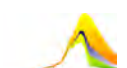
d. Population Growth - Cut-off Date at 2000 and at 2050

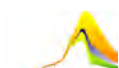
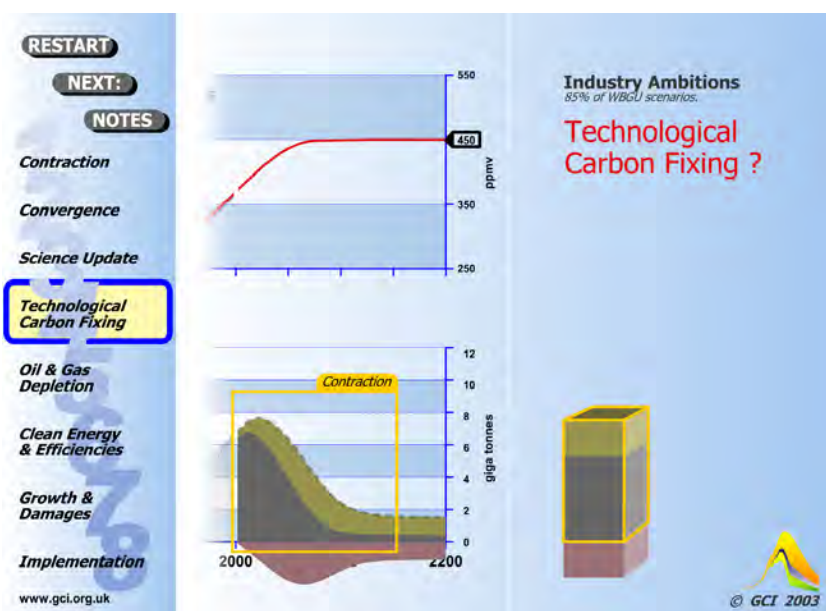
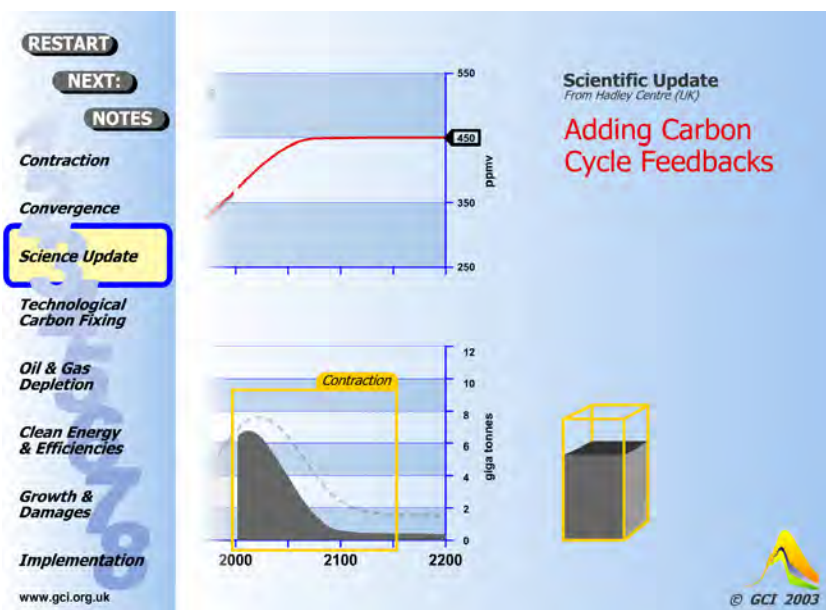
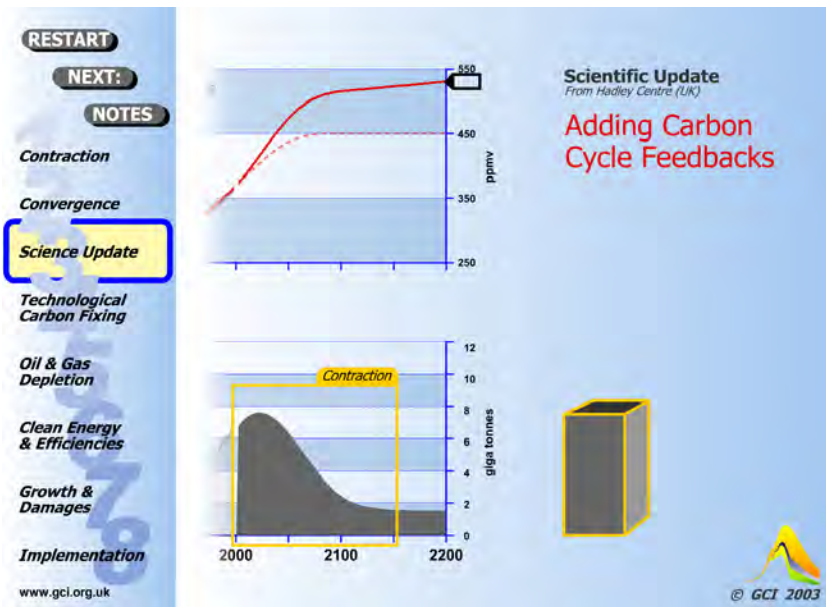
These two slides show the effect on a contraction for 450 ppmv with convergence by 2050, but with UNSTAT projections of 'medium fertility' population growth:

- Not continued forward beyond 2000
- Continued forward in the accounts until 2050

With the average per capita consumption responding to the projected population growth, particularly in the South, the effect of unfreezing the population projections from a base year at 2000, for any given rate of C&C is to keep the average lower and therefore weight the pre-distribution of entitlements from any rates of contraction and convergence in favour of South.

That said however, the pre-distribution of emissions entitlements is much more sensitive to the rate of convergence than it is to this population freeze/unfreeze function.





e. Scientific Update on Carbon Cycle and Sequestration

These slides show the relationship between contraction and concentrations, adjusted for new scientific findings.

f. Concentration Outcome Exceeded

Carbon-cycle feedbacks (forest die-back and soil carbon release as temperature rises) are now being included in the climate models run at the Hadley Centre of the UK Meteorological Office.

Previously given rates for contraction are now understood to lead to higher levels of atmospheric CO₂ concentration in the global atmosphere, or with the emissions budget reduced as seen below.

g. Emissions Budget Reduced

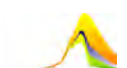
A dramatically faster contraction event is required to stabilise at the same level of atmospheric concentration (e.g. 450 ppmv).

h. Technological Carbon Fixation

More or less concurrent with these carbon-cycle announcements, there are voices in the corporate sector now arguing to research and commence a process of large-scale geological carbon capture and fixation.

Suggestions for dumping at sea or down disused oil wells are made.

There are unresolved technical problems associated with these proposals. There is an energy cost to doing this and there is also the problem of full-term security. Liquid and even solid CO₂ in large quantities is unstable and potentially hazardous.



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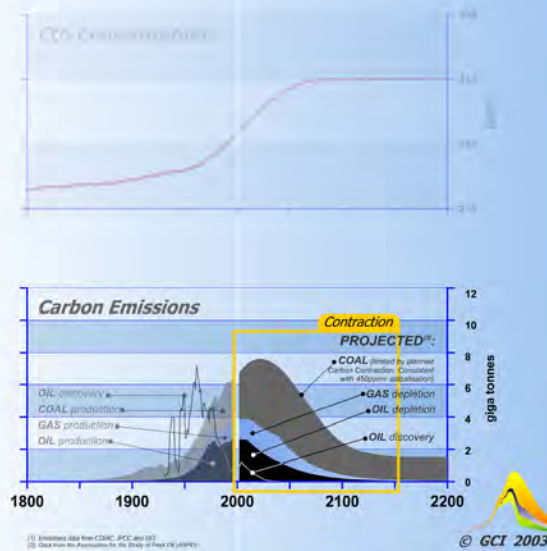
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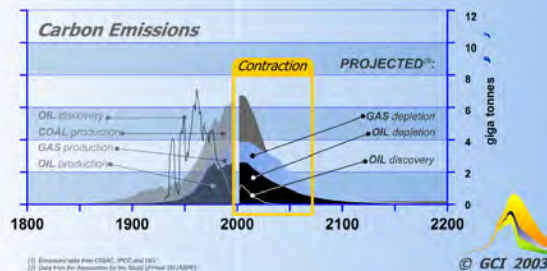
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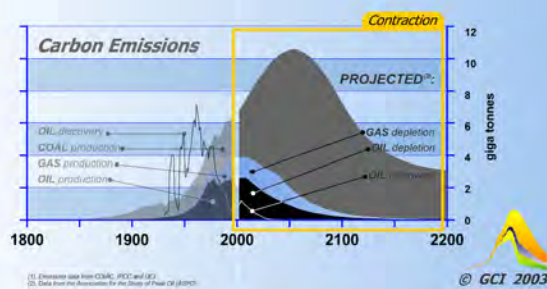
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i. The Effect of Oil & Gas Depletion on Contraction

Humanity now consumes over five barrels of conventional crude for every barrel it discovers.

Here is production overlaid with the discovery curve for conventional crude oil as recently been republished by EXXON.

In other words the world's oil dependency is being gradually broken by the geological reality of finite reserves.

At the same time, the climate-question is not so much whether we are running out of oil. The reality is that we are running out of oil too slowly for use of residual oil not to be a contributor to the causation of climate change.

These are the industry data for the production and consumption of oil, gas and coal over the last two hundred years.

The operative point is that you cannot produce and consume what you have not discovered.

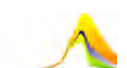
These data strongly suggest that we are either already at, or fast approaching, peak oil production and consumption.

And, as EXXON's own data reveals, new finds of conventional crude oil are increasingly insignificant.

Calculations for the depletion model come from ASPO (the Association for the Study of Peak Oil) from whom more information is available.

At the same time, there is no shortage of proven coal reserves.

These charts demonstrate the declining amount of oil and gas production with greater or lesser amounts of coal production, as before, implying different total emissions consistent with different outcomes for atmospheric CO₂ concentration.



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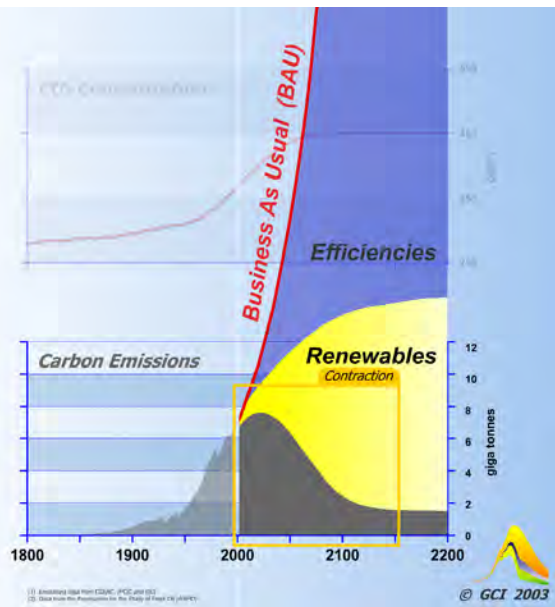
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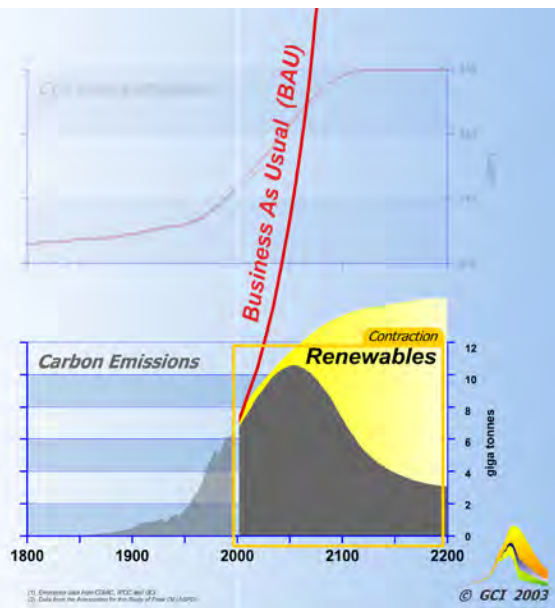
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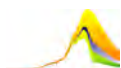
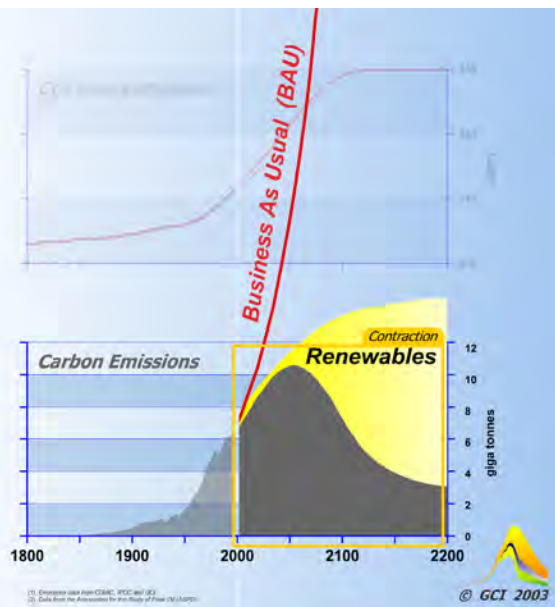
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j. Renewable “Sunrise” and Efficiency “Moonrise”

If the global economy sustained a path integral at 3% growth per annum into the future, it would follow the “Business as Usual” curve shown as the upward red line.

Especially in view of the impending climate and energy constraints, this seems increasingly unlikely.

If renewable energy sources are introduced vigorously under some sort of global Marshall Plan arrangements under-written by C&C, the physical supply limit might be around the 16 GigaTonnes carbon equivalent limit, as shown in the image.

Purely for the purposes of argument, the infrastructure implied in the supply curve shown (“Sunrise”) is roughly equivalent to putting one third of Australia under radial mirrors for solar-thermal electrolytic production of hydrogen. [This is illustrative and not made as an advocacy point].

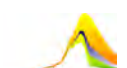
Economic “growth-optimists” assume unlimited growth, efficiency gains and privatisation.

However: -

1. Some argue that C&C is the safe-climate precondition of this or any growth.
2. Others say that the growth is the precondition of the safe climate.
3. Yet others say that if it is a contest between growth and safe climate, the growth is preferable to the safe climate strategies and that ‘adaptation’ to changing climate is the only realistic option for humanity in the years to come.

The last two arguments are irresponsible and dangerous.

The first argument is correct. It says that safe climate is the precondition of whatever is viable and sustainable in the future. Without this, as the economist Richard Douthwaite says, “growth is an illusion.”



RESTART

NEXT:

NOTES

Contraction

Convergence

Science Update

*Technological
Carbon Fixing*

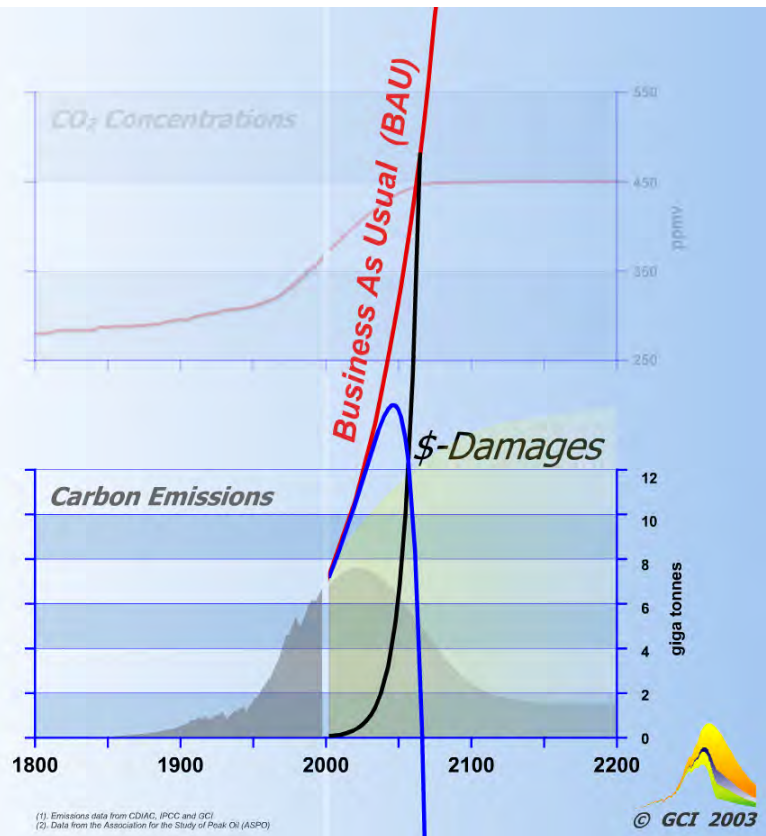
*Oil & Gas
Depletion*

*Clean Energy
& Efficiencies*

**Growth &
Damages**

Implementation

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RESTART

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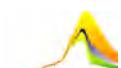
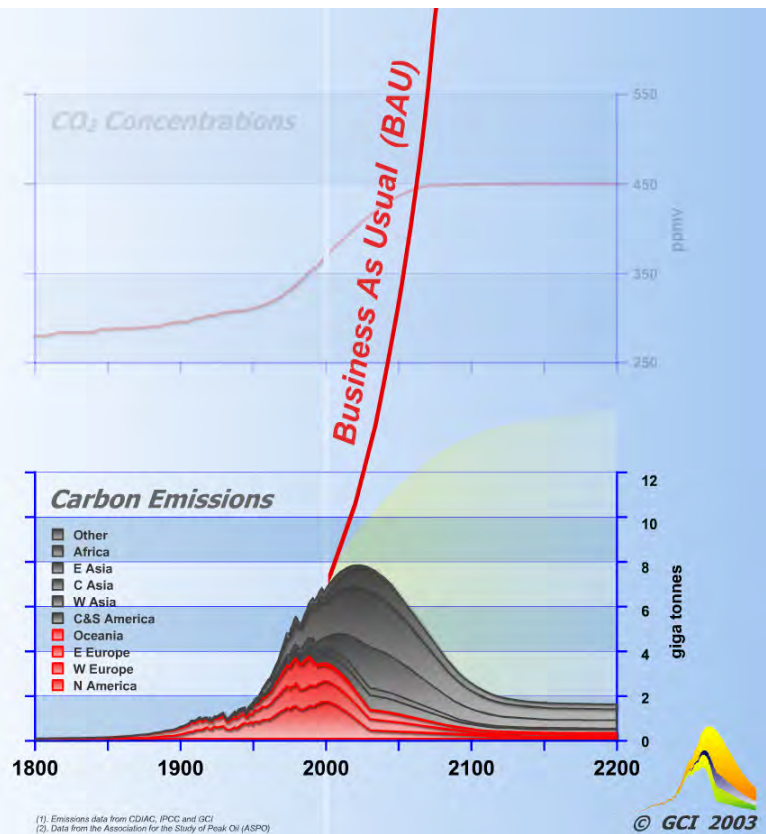
*Oil & Gas
Depletion*

*Clean Energy
& Efficiencies*

**Growth &
Damages**

Implementation

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Global Commons Institute (GCI)

k. Damages

Here, we introduce a damage curve (black curve) from climate related “natural disasters”, projected in the decades ahead at three to four times the rate of the economic growth shown.

This rate simply continues the rate for uninsured economic losses recorded by Munich Re over the four decades, 1960 to 2000, where damages doubled per decade.

GCI is not saying this future is going to happen any more than we are saying it isn't. We don't know and we don't know anyone who does.

What we are saying, however, is that this curve is widely quoted now and that it is better to project a trend of something rather than a blank.

When damages at this rate are subtracted from growth at 3% (blue curve), it is quickly apparent that the global economy is accelerating towards, rather than away from, bankruptcy as a result of increasingly dangerous rates of climate change.

l. Introducing North/South Regional Bubbles

GCI believes that the European Union provides a good model of regional co-operation.

The world as a whole could organise and then negotiate inter-regionally, in a total of around 8 to 10 blocks.

The African Union provides a good example for Asia of an emerging region with a strongly shared interest in avoiding damages from dangerous rates of climate change.

Using the New Partnership for Africa's Development (NEPAD) for example, the Union could benefit from the C&C basis of their global strategy.

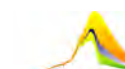
Here, as with the EU for example, differential anomalies within the group can be resolved within the region, rather than at the UN—with interesting implications for a possible Asian “bubble”.

Because of very low consumption rates in Africa, C&C creates purchasing power in the continent and terms of engagement with the world that are much improved against the status quo of debt and aid and continued creation of misery at the hands of the global economy.

Emulating C&C, the European Union is creating its own intra-regional dynamics, where the high-end and low-end consumers such as Germany and Greece, compromise within the regional arrangement.

The South African anomaly of high per capita emissions within the African region results from consumption levels created under apartheid, largely from international mining operations.

The EU experience suggests a way forward for African and indeed other unions such as could be found in East and Southeast Asia for example.



Contraction &

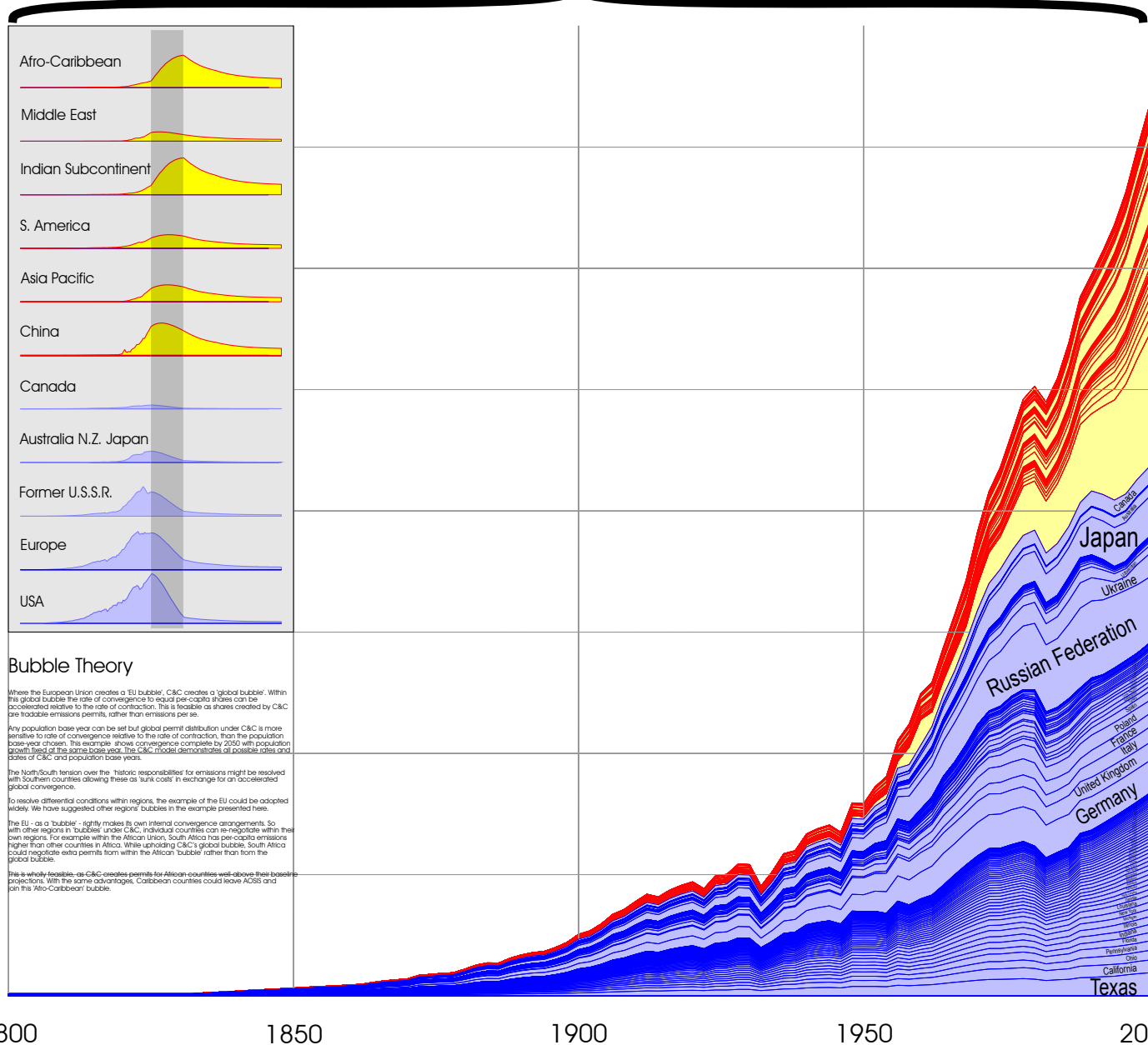
The Objective - stabilise atmospheric ghg concentrations

C&C is based on a global ghg emissions 'contraction' budget calculated from a safe and stable (revisable) ghg concentration target. The example shown is for CO₂ contraction complete by 2100 to give 450 ppmv, as modeled in IPCC Wg1.

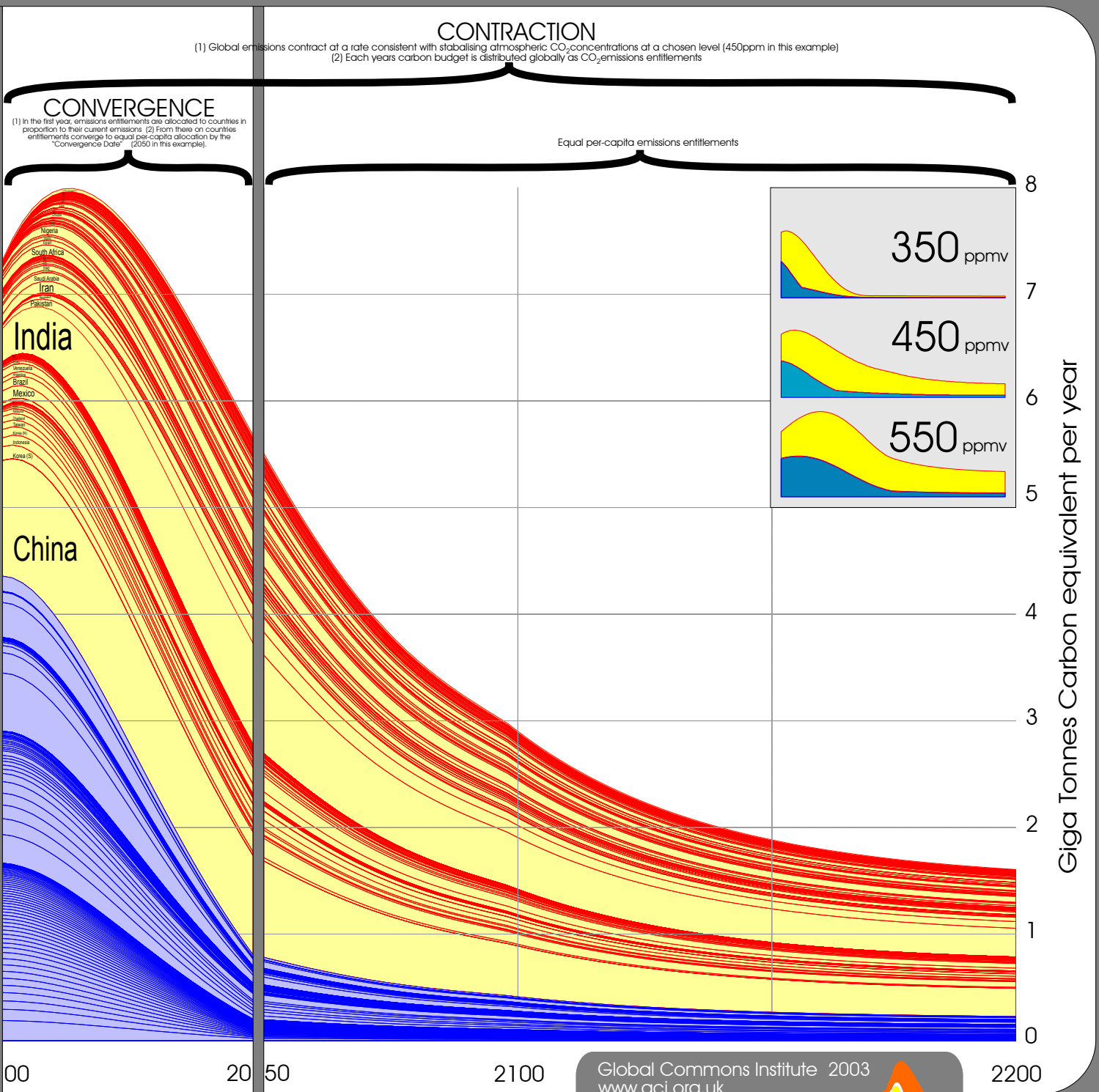
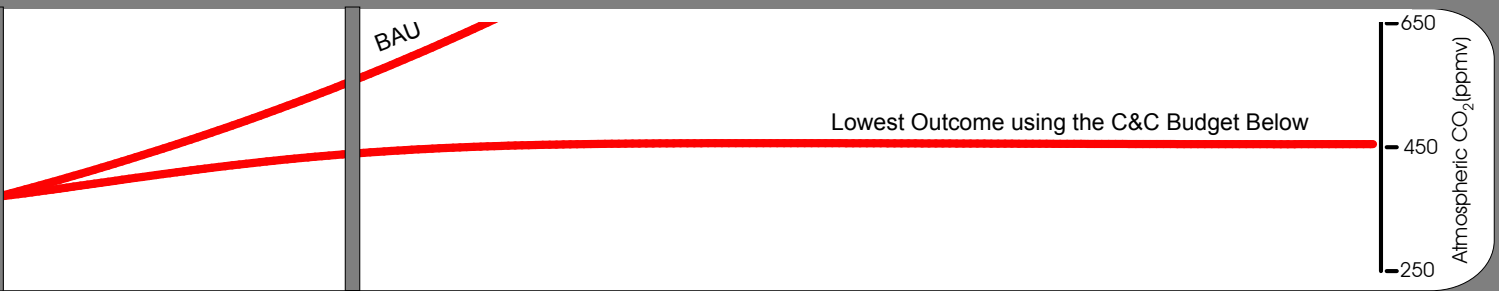
The Framework - contraction & convergence

Convergence is to equal per capita shares of contraction by an agreed date, [here by 2050 [population base year 2050]]. The model will show any rates of C&C.

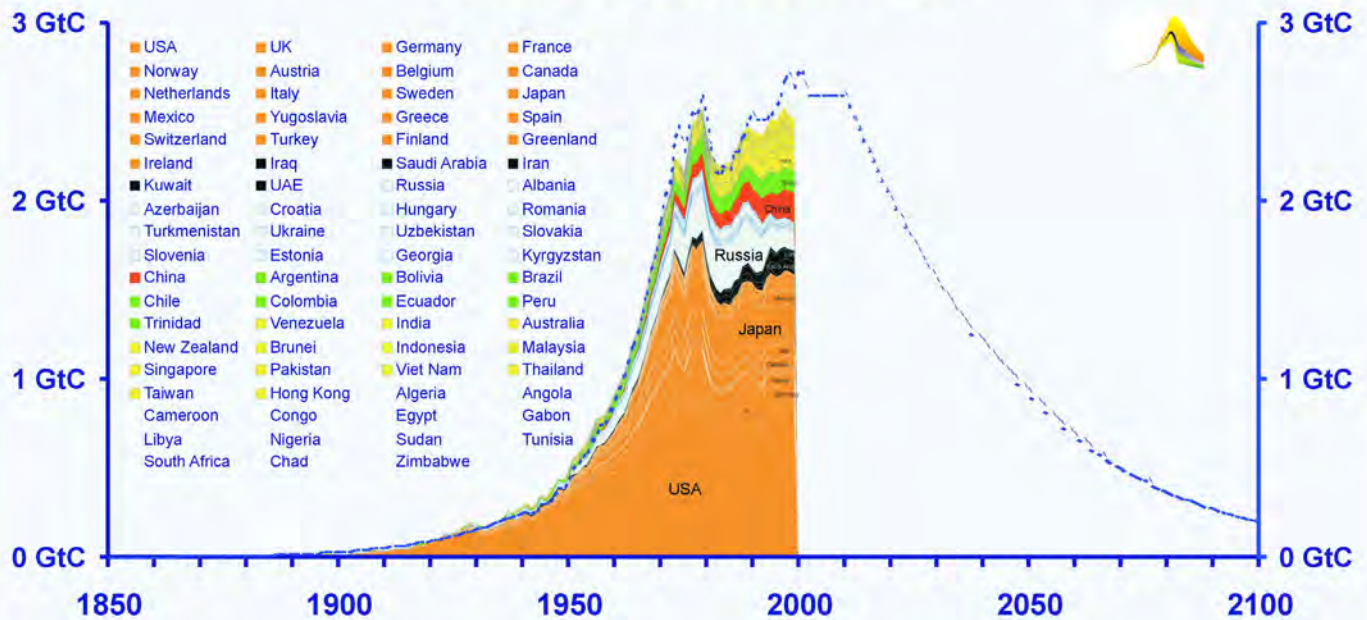
(1) Historic expansion of annual global CO₂ emissions
(2) Historic divergence of per-capita emissions within different regions and countries



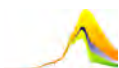
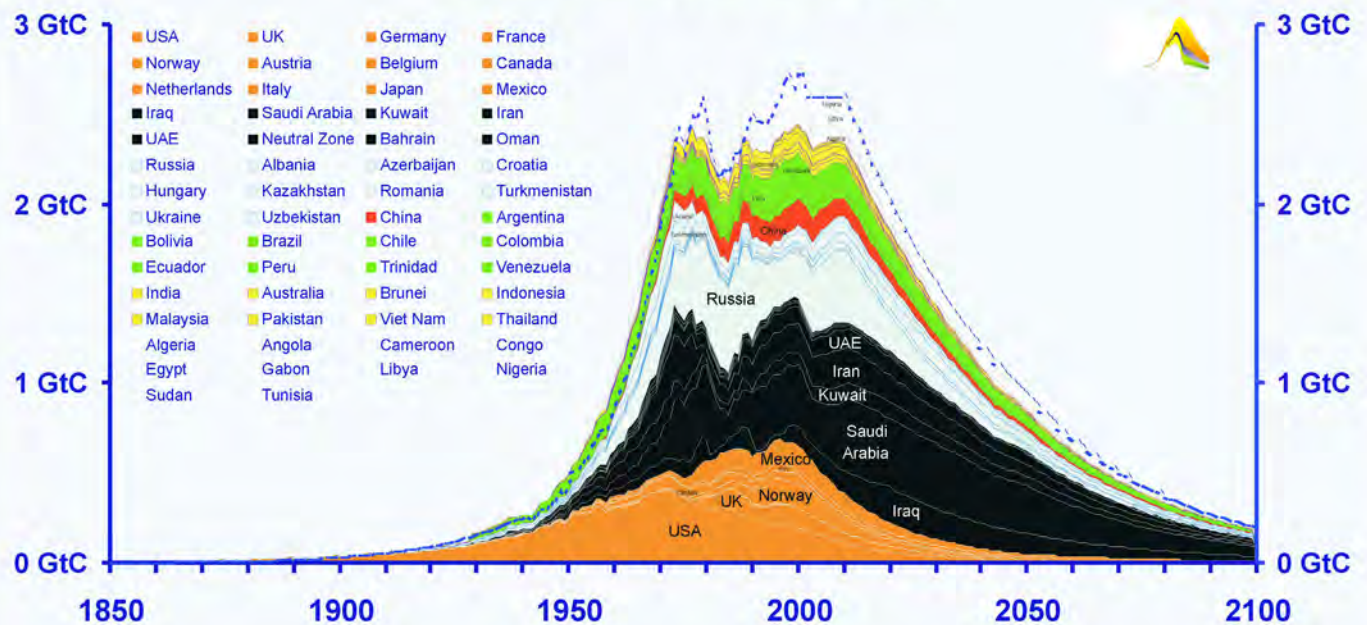
Convergence



Global Oil CONSUMPTION



Global Oil PRODUCTION

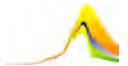
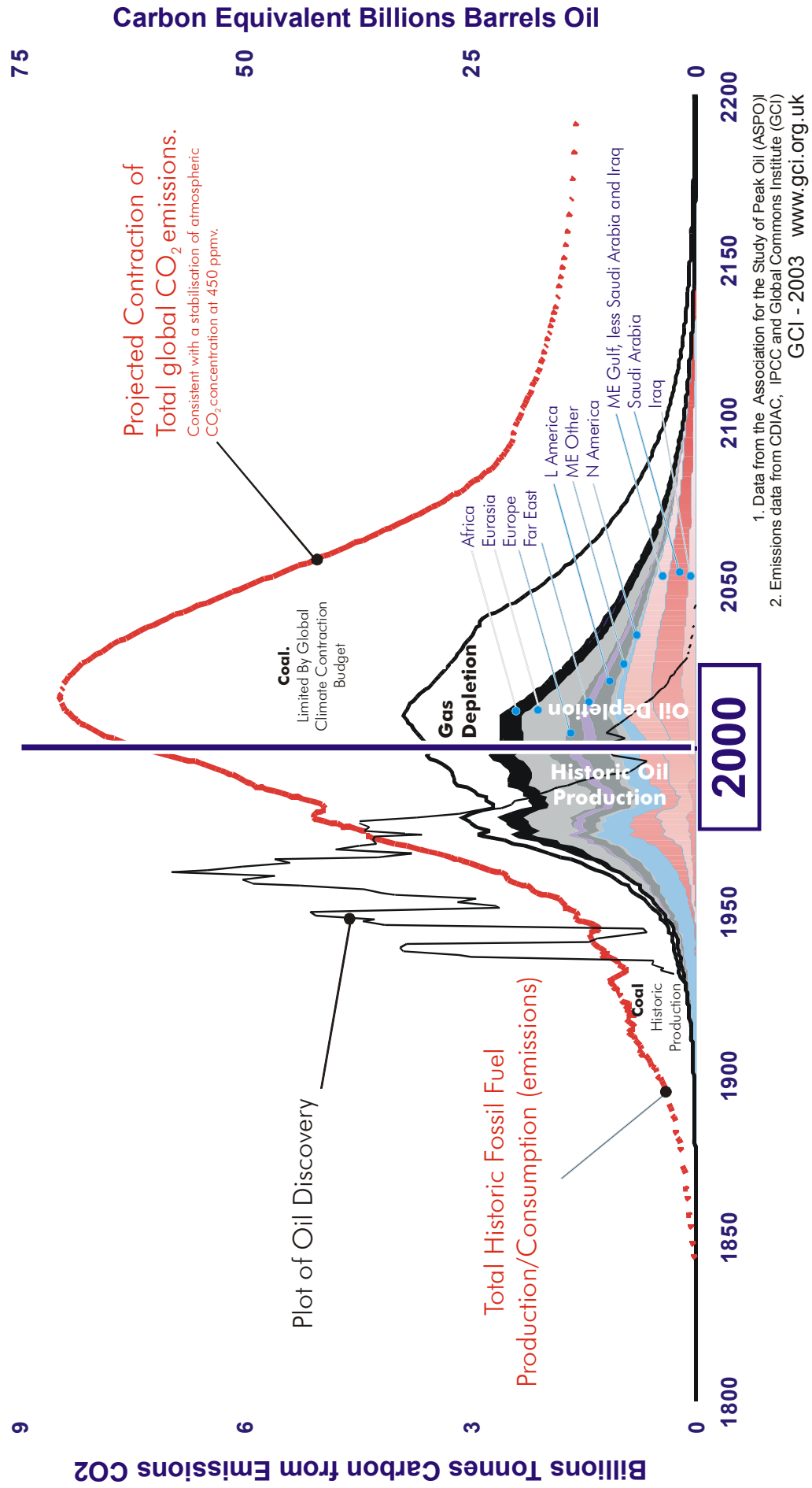


“Oil Reserves & Resources, the Depletion Debate,”

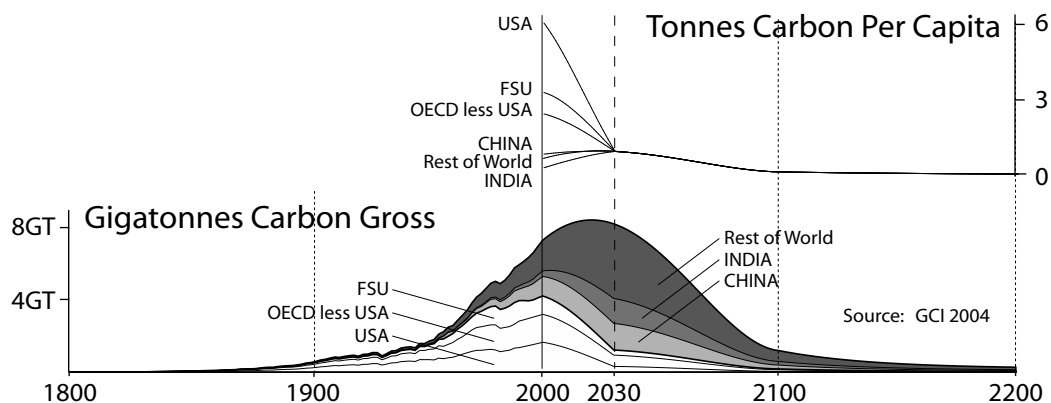
Institute of Energy 13 02 03

OIL¹ - Past Discovery/Production & Projected Depletion

CO₂ Emissions - Past Consumption and Projected Control



GCI BRIEFING: "CONTRACTION & CONVERGENCE"



This example shows rates of C&C negotiated as regions.
This example is for a 450ppmv Contraction Budget, Converging by 2030.

The Global Commons Institute [GCI] was founded in 1990. This was in response to the mainstreaming of global climate change as a political issue. Realising the enormity of the climate crisis, we devised a founding statement on the principle of "Equity and Survival". [1]

In November 1990, the United Nations began to create the Framework on Climate Convention [UNFCCC]. GCI contributed to this and in June 1992 the Convention was agreed at the Earth Summit in Rio. Its objective was defined as stabilizing the rising greenhouse gas [GHG] concentration of the global atmosphere. Its principles of equity and precaution were established in international law. Climate scientists had showed that a deep overall contraction of GHG emissions from human sources is prerequisite to achieving the objective of the UNFCCC. In 1995 negotiations to achieve this contraction began administered by the specially created UNFCCC secretariat.

Between 1992 and 1995 and at the request of the Intergovernmental Panel on Climate Change [IPCC], GCI contributed analysis highlighting the worsening asymmetry, or "Expansion and Divergence" [E&D] of global economic development. It became clear the global majority most damaged by climate changes were already impoverished by the economic structures of those who were also now causing the damaging GHG emissions. [2]

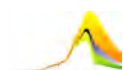
To create a sustainable basis on which to resolve this inequity, GCI also developed the "Contraction and Convergence" (C&C) model of future emissions. In 1995 the model was introduced by the Indian Government [3] and it was subsequently adopted and tabled by the Africa Group of Nations in August 1997. [4]

Negotiations for the Kyoto Protocol to the UNFCCC ran from 1995 until 1997. In December 1997 and shortly before they withdrew from these negotiations, the USA stated, "C&C contains elements for the next agreement that we may ultimately all seek to engage in." [5]

Since then C&C has been widely referenced in the debate about achieving the objective of the UNFCCC. In 2000 C&C was the first recommendation of the UK Royal Commission on Environmental Pollution in its proposals to government. [6] In December 2003 C&C was adopted by the German Government's Advisory Council on Global Change in its recommendations. [7] In 2003 the secretariat of the UNFCCC said the objective of the UNFCCC, "inevitably requires 'Contraction and Convergence.'" [8] The Latin America Division of the World Bank in Washington DC said, "C&C leaves a lasting, positive and visionary impression with us." In 2004 the Archbishop of Canterbury took the position that, "C&C thinking appears utopian only if we refuse to contemplate the alternatives honestly." [9] In 2002, the UK Government accepted GCI authorship of the definition statement of C&C, recognising the need, "to protect the integrity of the argument."

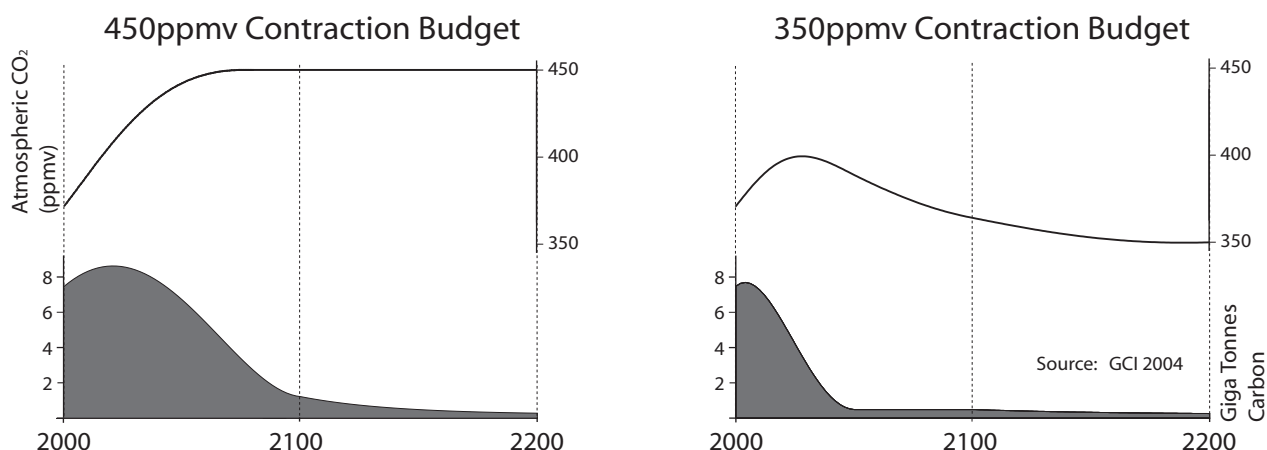
This statement follows and is available in thirteen languages. [10] It has been adopted by the House of Commons Environmental Audit Committee and in part in the UN's forthcoming "Millennium Assessment." In 2005, the UK Government will host the next G-8 summit. The Government has already committed this event to dealing strategically with the problems of Africa and Climate Change. Numerous civil society and faith groups are now actively lobbying the Government to have C&C adopted as the constitutional basis for avoiding dangerous future climate change.

- [1] <http://www.gci.org.uk/signon/OrigStatement2.pdf>
- [2] <http://www.gci.org.uk/articles/Nairob3b.pdf>
- [3] http://www.gci.org.uk/Archive/MegaDoc_19.pdf [page 116]
- [4] http://www.gci.org.uk/nairobi/AFRICA_GROUP.pdf
- [5] http://www.gci.org.uk/temp/COP3_Transcript.pdf
- [6] http://www.gci.org.uk/Endorsements/RCEP_Chapter_4.pdf
- [7] http://www.gci.org.uk/Endorsements/WBGU_Summary.pdf
- [8] http://www.gci.org.uk/slideshow/C&C_UNFCCC.pdf
- [9] <http://www.gci.org.uk/speeches/Williams.pdf>
- [10] <http://www.gci.org.uk/translations.html>



“CONTRACTION & CONVERGENCE” - DEFINITION STATEMENT

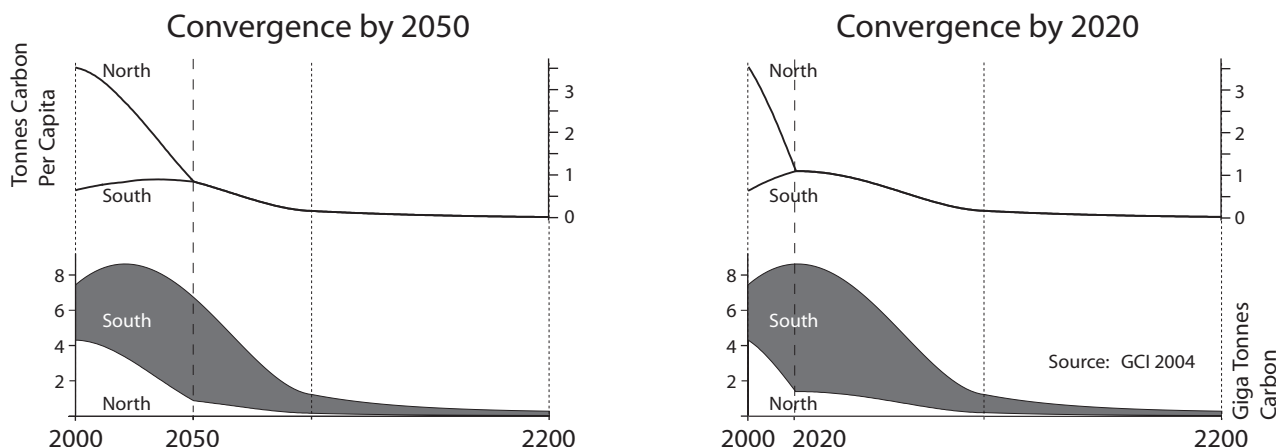
Negotiating Rates of Contraction



Annual Carbon Emissions contract over time to a sustainable level. This is the "Contraction Event".
The Choice of a "safe" CO₂ stabilisation level determines the total tonnage of carbon to be burnt during the contraction event.
Two examples of CO₂ stabilisation levels are shown above, with their corresponding contraction budgets.

1. "Contraction and Convergence" (C&C) is the science-based, global climate-policy framework, proposed to the United Nations since 1990 by the Global Commons Institute (GCI). [1,2,3,4]
2. The objective of safe and stable greenhouse gas concentrations in the atmosphere and the principles of precaution and equity, as already agreed in the "United Nations Framework Convention of Climate Change" (UNFCCC), provide the formal calculating basis of the C&C framework that proposes:
 - * A full-term contraction budget for global emissions consistent with stabilising atmospheric concentrations of greenhouse gases (GHGs) at a pre-agreed concentration maximum deemed to be safe, following IPCC WG1 carbon cycle modelling. (See Image Two on page two - GCI sees higher than 450 parts per million by volume [ppmv] CO₂ equivalent as 'not-safe').
 - * The international sharing of this budget as 'entitlements' results from a negotiable rate of linear convergence to equal shares per person globally by an agreed date within the timeline of the full-term contraction/concentration agreement. (GCI suggests [a] between the years 2020 and 2050, or around a third of the way into a 100 year budget, for example, for convergence to complete (see Image Three on page two) and [b] that a population base-year in the C&C schedule is agreed).
 - * Negotiations for this at the UNFCCC should occur principally between regions of the world, leaving negotiations between countries primarily within their respective regions, such as the European Union, the Africa Union, the US, etc. (See Image One on page one).

Negotiating Rates of Convergence



Per capita emissions around the World converge on equality by a negotiated "Convergence Date".
Two examples of convergence are shown here, each within a 450ppmv contraction budget.

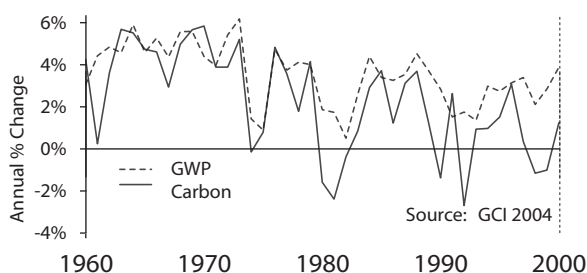


- * The inter-regional, inter-national and intra-national tradability of these entitlements in an appropriate currency such as International Energy Backed Currency Units [EBCUs - 5] should be encouraged.
- * Scientific understanding of the relationship between an emissions-free economy and concentrations develops, so rates of C&C can evolve under periodic revision.

3. Presently, the global community continues to generate dangerous climate change faster than it organises to avoid it. The international diplomatic challenge is to reverse this. The purpose of C&C is to make this possible. It enables scenarios for safe climate to be calculated and shared by negotiation so that policies and measures can be internationally organised at rates that avoid dangerous global climate change.

4. GHG emissions have so far been closely correlated with economic performance (See Image Four Page Three). To date, this growth of economies and emissions has been mostly in the industrialised countries, creating recently a global pattern of increasingly uneconomic expansion and divergence [E&D], environmental imbalance and international insecurity (See Image Four Page Three).

GWP, Carbon Lockstep



Year to year percentage change of Gross World Product, GWP (measured in US\$) and Global Carbon emissions

5. The C&C answer to this is full-term and constitutional, rather than short-term and stochastic. It addresses inertial argument about 'historic responsibilities' for rising concentrations recognising this as a development opportunity cost to newly industrialising countries. C&C enables an international pre-distribution of these tradable and therefore valuable future entitlements to emit GHGs to result from a rate of convergence that is deliberately accelerated relative to the global rate of contraction agreed (see Image Three on page two).
6. The UK's Royal Commission on Environmental Pollution [6] and the German Advisory Council on Global Change [7] both make their recommendations to governments in terms of formal C&C. Many individual and institutional statements supporting C&C are now on record. [8, 9] The Africa Group of Nations formally proposed it to the UNFCCC in 1997. [10] It was agreed in principle at COP-3 Kyoto 1997. [11] C&C conforms to the requirements of the Byrd Hagel Resolution of the US Senate of that year [12] and the

European Parliament passed a resolution in favour of C&C in 1998. [13]

7. This synthesis of C&C can redress the increasingly dangerous trend imbalances of global climate change. Built on global rights, resource conservation and sustainable systems, a stable C&C system is now needed to guide the economy to a safe and equitable future for all. It builds on the gains and promises of the UN Convention and establishes an approach that is compelling enough to galvanise urgent international support and action, with or without the Kyoto Protocol entering into force.

- [1] <http://www.gci.org.uk>
- [2] <http://www.gci.org.uk/model/dl.html>
- [3] [http://www.gci.org.uk/images/CC_Demo\(pc\).exe](http://www.gci.org.uk/images/CC_Demo(pc).exe)
- [4] http://www.gci.org.uk/images/C&C_Bubbles.pdf
- [5] <http://www.feasta.org/events/debtconf/sleepwalking.pdf>
- [6] <http://www.rcep.org.uk/pdf/chp4.pdf>
- [7] http://www.wbgu.de/wbgu_sn2003_engl.pdf
- [8] http://www.gci.org.uk/Archive/1989_2004
- [9] <http://www.gci.org.uk/consolidation/Sasakawa.pdf>
- [10] <http://www.gci.org.uk/papers/zew.pdf> [appendix C, page 16]
- [11] http://www.gci.org.uk/temp/COP3_Transcript.pdf
- [12] <http://www.gci.org.uk/briefings/C&CByrdHagel.pdf>
- [13] http://www.gci.org.uk/consolidation/UNFCCC&C_A_Brief_History_to1998.pdf [pp 27 - 32]

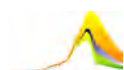
The charts on page four are stacked one above the other on the same horizontal time axis [1800 - 2200]. This helps to compare some of what is known about existing rates of system change with an underlying assumption in favour of a C&C arrangement being put in place.

A new feature shown is the rate of economic damages from increasingly 'unnatural disasters' (measured as 'uninsured economic losses' by Munich Re) now rising at 7% per annum, twice the rate of global growth. Another is the devastating and worsening economic asymmetry of "Expansion and Divergence" (E&D). This shows a persistent pattern of increasingly dysfunctional economic growth. One third of population have 94% of global purchasing power and cause 90% of GHG pollution. [We call these 'debtors']. The other two thirds, who live on less than 40% of the average global per capita income, collectively have 6% of global purchasing power and a 10% share of GHG pollution. [We call these 'creditors'].

To escape poverty, it is creditors who embody the greatest impulse for future economic growth and claim on future GHG emissions. But this group also has the greatest vulnerability to damages from climate changes.

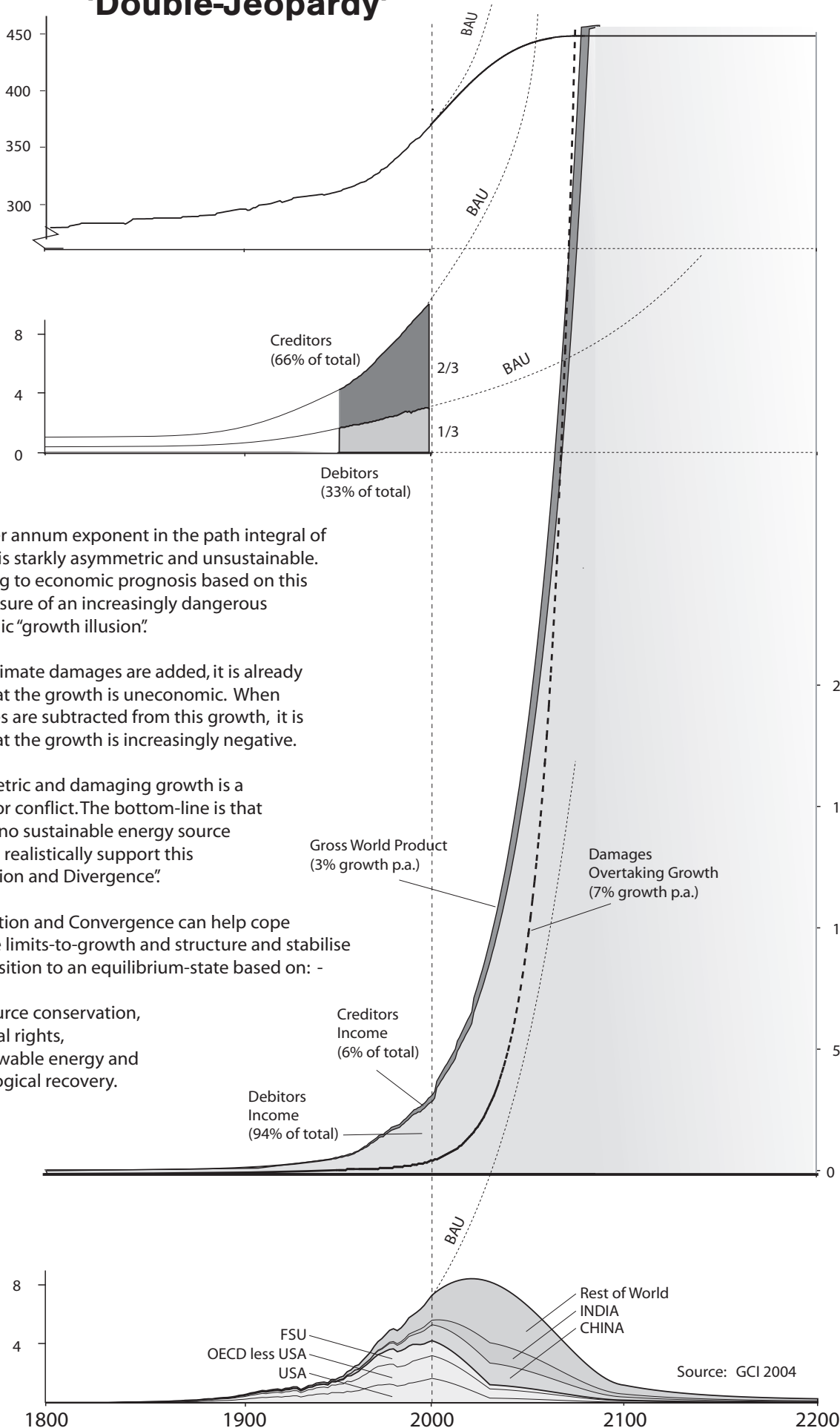
Most institutions now acknowledge that atmospheric GHG stabilization, "inevitably requires Contraction and Convergence". However, some of the response to C&C, sees it merely as 'an outcome' of continued economic growth with only tentative acknowledgement of the damages and little comprehension of E&D.

While C&C is not primarily about 're'-distribution, it is about a 'pre'-distribution of future tradable and valuable permits to emit GHGs. Its purpose is to resolve the devastating economic and ecological imbalance of climate change. GCI's recommendation to policy-makers at the United Nations is for the adoption of C&C globally for ecological and economic recovery as soon as possible.



Atmospheric CO₂ (ppmv)

Gigatonnes Carbon Emissions (gross)



MEMORANDUM

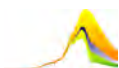
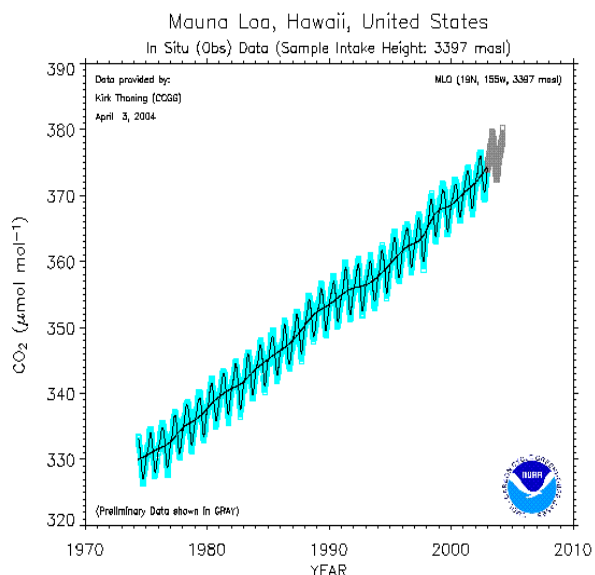
1. Introduction

- 1.1. GCI welcomes these hearings by the Environmental Audit Committee [EAC] of the UK House of Commons into, "The International Challenge of Climate Change, UK Leadership in the G-8 and the EU." We also welcome that the EAC recognize the "Contraction and Convergence" [C&C] concept as a frame of reference for investigating how this challenge might be met. For fifteen years we have developed this as 'honest concept-language'. We hope this Inquiry will uphold and clarify this record.

2. Context

UK Leadership on Climate Change in the EU and G-8 Presidencies

- 2.1. The Royal Commission on Environmental Pollution's [RCEP] 22nd Report dated June 2000 concludes the first chapter with these words: -
- 2.2. *"The world is now faced with a radical challenge of a totally new kind, which requires an urgent response. The longer the response is deferred, the more painful the consequences will be."* Later it says, *"the present concentration of carbon dioxide in the atmosphere, about 370 ppmv, is well outside the range recorded in the last half million years . . . There is no precedent in recent geological history to help us understand precisely what consequences will follow."*
- 2.3. In the five years since its report, effective action has not been taken and emissions and concentrations have steadily increased. Carbon dioxide concentration in the atmosphere increased at the rate of 1.5 ppmv in the 1990s. It increased 2.1 ppmv in 2001, 2.5 ppmv in 2002 and an unprecedented 3.01 ppmv in 2003. This touches 380 ppmv or 40% above pre-industrial concentration level. We do not know yet whether this accelerating rise indicates a start to runaway global warming. However, Dr Ralph Keeling of NOAA's atmosphere monitoring station at Mauna Loa has said this year, *"if you want to know what positive feedback looks like, it will look like this."*



2.4. KEY MESSAGE TO UK GOVERNMENT: ADOPT C&C

- 2.5. The RCEP looked at 'prospects for an effective global response' and concluded with the single recommendation: -
"The Government should press for a future global climate agreement based on the contraction and convergence approach, combined with international trading in emission permits. Together, these offer the best long-term prospect of securing equity, economy and international consensus."
- 2.6. The UNFCCC Secretariat says achieving the Convention's objective, *"inevitably requires 'contraction and convergence'."*
- 2.7. The UK Government should now adopt the recommendation of the Royal Commission. It should make it clear, prior to its presidency of the EU and G8, that the Government supports Contraction and Convergence; and during its presidency, the UK Government should pursue all means by which C&C will be adopted and implemented internationally.

3. Objective

"Changing the Maths We Live By"

- 3.1. A briefing on '**Contraction & Convergence**' [C&C] is published this December in the journal "**Engineering Sustainability**". It is closely based on the briefing that follows.
- 3.2. The journal is published by the prestigious Institute of Chemical Engineers [ICE] in London. They suggest that C&C, *"could prove to be the ultimate sustainability initiative."*
- 3.3. Seeing the maths of C&C as, *"an antidote to the expanding, diverging and climate-changing nature of global economic development,"* they describe C&C as, *"an ambitious yet widely supported plan to harmonise global greenhouse gas emissions to a safe and sustainable level per person within the next few decades."*
- 3.4. Making an unexpected inter-disciplinary link, ICE also note that in July 2004 C&C, "received divine backing from the Church of England." This was helpful to the mission of the incumbent UK Prime Minister, a religious man who recognizes changing climate's threat to civilization. Mr Blair has correctly said that the cost of preventing climate change is less than the cost of failing to prevent it.
- 3.5. At the time the ICE journal went to press, I was interviewed by the internationally read industry news-service Argus Emissions. Inter alia they asked me, *"what would your advice to President Bush be on climate change issues?"*
- 3.6. Thinking about the inter-disciplinary link, I remembered the story told by the Archbishop of the Church of England, Rowan Williams, about the religious right in the US. It is said they were behind the recent re-election of George Bush.
- 3.7. They noted Rowan's speech in support of C&C "Changing the Myths We Live By" and told him, *"Archbishop, you lack faith in God: if God wants to change the climate, he will change it."*
- 3.8. This challenge to 'Divine Support' exercised me more than the support itself, so I replied to Argus, *"Mr. Bush is a self-declared man of God. He does nothing to hinder climate change, and has been effectively positioned as its agent. So I advise candour in his relationship with God about the prospect of more people dying as a result of unfettered climate change than in the entire history of human conflict."*
- 3.9. It seems that a 'Twilight of the Gods' looms at the G-8 in 2005. The two top chairs – Mr Blair's and Mr. Bush's – appear for the moment to be the seats of Divine Support for clearly opposite views of climate change. Mr. Bush's view is that it is God's will to change the climate; this is the 'let go and let god' position that says whatever the costs, there are greater benefits. The other is the 'God



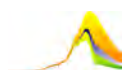
helps those who help themselves' position. This says it is not against God's will to avoid that cost whatever the effort required, as unless we make this effort, the climate changes we force will force unbearable changes on us and our children.

- 3.10. Such is the tension that UK avoidance is already being mooted. A relevant government website now refers to a preparatory meeting for the G-8 in March 2005 at which, "Discussion . . . will not centre on targets for limiting carbon emissions, but on the business case for the adoption of lower carbon technology in countries with the biggest energy needs."
- 3.11. This memo is intended to help focus the light shed by the Environmental Audit Committee on the dilemma that grips Mr Blair, Mr Bush, their G-8 colleagues and indeed all of us.
- 3.12. Pursuing the impossible dream of infinite growth is expansion and divergence and death by damages. 'Changing the Myths We Live By', means 'Changing the Maths' to renewables and a low carbon economy in a C&C framework, the ultimate sustainability initiative.

4. Role of Contraction & Convergence

'Honest Concept-Language'; Basic to Changing the Maths we Live by "Protecting the Integrity of the Contraction & Convergence Argument"

- 4.1. In EAC's "Sustainable Development Strategy" report [No 13, November 2004] they identify climate change as, "the greatest challenge the world now faces". Focusing on the issue of global CO₂ emissions rising out of control, they note, "potentially catastrophic results" if humanity continues to ignore the environmental limits to economic development activities. EAC also recognizes the concept-discourse of 'Sustainable Development' as the over-arching framework within which human activity should now take place. Noting that the language of 'sustainable development' is, *"ambiguous and complex"* EAC also say, *"there is an urgent need to promote a deeper understanding of sustainable development and to incorporate it within all aspects of policy making."*
- 4.2. Crucially, EAC further recognizes a deeper and really fundamental problem. As terms are coined and taken into common everyday usage, EAC is correctly concerned about how these initially meaningful terms can become debased when Governments and other parties use them indiscriminately to describe what they were doing anyway. They cite, for example, how the term 'sustainable development' now proliferates in departmental formulations such as 'sustainable transport', 'sustainable communities', and even 'sustainable growth'. EAC suggests that such attempts to lend what it calls 'ethical credibility' to existing programmes are, *"a cause for serious concern"* and potentially even "facetious".
- 4.3. We agree. The opportunistic, euphemistic and even oxymoronic use of concept language, especially when trade-offs between basic survival rights and economic wrongs are linked to rates of environmental change, is counter-productive. In the already fraught international negotiating conditions to avert dangerous rates of climate change, many people are already dying as a result of the associated impacts. Consequently converting concept language into oxymorons and euphemisms to disguise unresolved ideological conflicts over economic and other forms of future growth makes yet more difficult the possibility of coming to the constitutional terms of sustainable development - indeed of security and survival - at all.
- 4.4. The cost of failing to avert dangerous rates of climate change is inestimable. But the prospect of paying this is increasing, as with the growth of population, the economy and the resultant greenhouse gas pollution, we generate trends of climate change faster than we respond to restrain them. In this context, the growing use of the "Contraction and Convergence" [C&C] concept and language is welcome. However, the ambiguity and misuse of this concept-language, raises a cost to the concept.
- 4.5. On the one-hand intelligent peer-reviewed reports from the Intergovernmental Panel on Climate Change [IPCC] observe that, *"C&C takes the rights-based-approach to its logical conclusion"*. The



secretariat to the UN Framework Convention on Climate Change [UNFCCC] has underlined the logic saying that, *"stabilization [the objective of the UNFCCC] inevitably requires 'contraction and convergence'."* The Archbishop of Canterbury recently underscored the reflexive nature of the logic of C&C saying that, *"This kind of thinking appears utopian only if we refuse to contemplate the alternatives honestly."* He pressed the Government to give global leadership with C&C at the forthcoming G-8. The Royal Commission on Environmental Pollution has also pressed this C&C leadership point on the UK Government since 2000. These are important messages that reflect the value of the 'honest-language' capital invested in C&C. They reflect the causal intent coherently structured in the principles of the global C&C framework and methodology.

- 4.6. At the same time, debasing the language capital of C&C, we now have advisors to and operatives in the British government simultaneously pressing views of C&C that not only contradict the model, they also contradict each other. In one set of arguments C&C is merely seen as the 'outcome', rather than the cause, of what we will all be doing in further quasi-random Kyoto-style negotiations.
- 4.7. In another, C&C faces the problem of being described by British civil servants as, "a mathematical inevitability if we are to avoid dangerous climate change" whilst also being a "theory" the *"calculations [of which] we just didn't understand."* Disturbing on the diplomatic front is the situation where C&C is now wrongly described by some civil servants as both *"lacking support in Developing Countries" yet also "supported, [in India for example] but for the wrong reasons"* [see Annex Three].
- 4.8. Yet the Government wrote to GCI undertaking to *"protect the integrity of the [C&C] argument"* and source GCI.
- 4.9. The intent with C&C has always been to integrate, simplify and - crucially - 'quantify' key issues relating energy and environmental limits to political structure built on rational principle. This enables inclusive, full-term practice and process to be guided before and during the fact by agreement to stability, as is required by the UNFCCC.
- 4.10. C&C is as much input as outcome; it is 'cause' before it is 'effect'. As such it has significant support around the world which should be nurtured rather than squandered by the debasement of its language or its methods. Clearly the cognitive and diplomatic effort required to guide the climate negotiations must be driven by the goal of the UNFCCC and a coherent framework for 'sustainable development', not contradictions and oxymorons.
- 4.11. This is a core message that we wish to establish in the C&C inquiry with EAC members. C&C concept-capital does not compromise prosperity. It under-writes it by subordinating future economic growth to global environmental security. The G-8 is an opportunity to establish C&C as the basis of the necessary framework.

5. Key Strategic Issues and Questions

- 5.1. **Is there a consensus on the need to reduce emissions and on the level of carbon in the atmosphere which we must not exceed?**
a) In a word; 'yes'. If the word 'consensus' is defined by gross majority of people concerned, the answer is noisy but increasingly 'yes'. If 'consensus' is defined by majority of relevant informed 'experts', the answer is a clear signal from the recognition of the need as defined. In other words, there is an overwhelming 'yes'. If 'consensus' is defined by all relevant 'experts' including noisy ones from the minority of the so-called 'contrarian experts', the signal to noise ratio becomes noisier again and this is distorted further when the media promote adversarial debate between experts from both sides one-to-one.
- 5.2. **Is that enough to prompt a commensurate response from politicians and business/industry?**
a) Notwithstanding detail in the first answer, the answer is a clear yes. Moreover, this response has begun. However, it is proceeding much too slowly as taking account of what we do know from the science about rates of changes, we know that time is not on our side.



5.3. Will free market approaches (including drivers such as the price of fossil fuels, and technical innovation) adequately address the need to limit carbon emissions?

a) No, as prices are an effect before they are a cause. They are rising in response to oil and gas scarcity, but as it is plentiful, coal consumption will rise in response. This will not only drive the aggregate price of fossil down again, it will drive emissions up faster as the carbon intensity of coal is twice that of gas, with oil halfway between the two. When emissions should be falling globally at least 2% a year, they are rising at 2% a year. Global damages from atmospheric accumulation of emissions, albeit from a lower base, are rising at three to four times the rate of the emissions increase. The market is to a large extent the amplifier of this, so markets cannot lead us out of this crisis. However unfashionable it may be, to remain constructively relevant, markets must be understood as "framework-based markets" directed by government to work within to the reality of environmental limits.

5.4. What role should governments play?

a) As a path integral, growth is becoming un-economic as it is increasingly asymmetric and damaging. Governments should now stop being driven by this blind, formless and over-riding goal of growth. [See Annex One]. Sustainable development is much more about personal and community development, than it is about remote economic development and increasingly disembodied financial growth. *"Money doesn't create value, life does."* A failure to restrain uneconomic growth simply destroys development.

b) For 'governance' to work at any level, from local to global, it needs to be primarily grounded in constitutional frameworks that recognize environmental limits in the commons, with resource conservation and personally equal rights in resource consumption patterns that impact on the commons. This is increasingly about the impact of energy consumption on the global commons. [See details under Expansion and Divergence, See Annex One].

c) Facing the scale of losses implied by climate change, it is time to stock-take and recognize over-consumption and 'over-shoot' and their potentially fatal implications. WWF's *"Living Planet Index"* is an excellent example of this. [See reference] Either we make changes or the climate changes we force will force unbearable changes on us.

d) So we need to reframe at a more fundamental level and change the epistemology of development and politics. With over-shoot, the evolution of capital and labour has reached the 'constitutional crunch-moment'. Governments must speak to this. The imperative now is to adjust the dialectical politics, the blue and the red positions, to the over-riding green imperative, the constitutional politics of pre-distribution under limits. The historical process where private shares [blue equity] are traded in the market, mitigated by redistributive social justice [red equity], has increasingly blinded capital development and industrial relations about the need to preserve the collateral of the geo/biological resource base upon which we jointly and severally depend for survival [green equity].

e) This survival/equity synthesis is the 'white-light' of a new understanding. With this, we may yet respond to the key feedback of climate change itself and avoid accelerating resource-depletion and market-failure into the security nightmare of social conflict and ecosystem collapse.

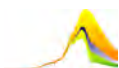
f) As with the pre-distributive sequence of cap-and-trade, markets and prices, by definition, are more effect than cause. They cannot and will not lead change. They can follow the signals from strong political leadership. In a phrase; Governments cap and markets trade.

g) To signal this cognitive change, Government must in the light of it: -

i) Openly accept that climate change is a deepening crisis that requires private economic aspiration and public development policy now to be governed by an absolute and collective commitment to achieve the objective of the United Nations Framework Convention on Climate Change (UNFCCC) as soon as possible. This, by design, is stabilization of the rising concentration of greenhouse gas in the atmosphere at a level low enough to prevent dangerous interference with and potentially runaway disequilibrium in the climate system.

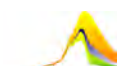
ii) Because of the above, educate and internationally lead and canvass for the agreement necessary for the establishment and implementation of global Contraction and Convergence C&C procedures [see elsewhere for details of C&C].

iii) Nationally lead, educate and legislate for conservation behaviour, introducing energy demand-management in the form of the Personal Equal Carbon Quota Scheme personally traded in the private sector, as led in the recent Private Members Bill. Also, within this model, invoke the precedent of rationing and war-bonds. Centrally rebalance public/private investment in non-fossil



fuel technology development, deployment with increasing the reliance on decentralised conservation, solar systems, co/generation and distribution networks and the reuse and renewal possible with biological energy and transport systems.

- 5.5. **To what extent are international agreements and mechanisms needed to limit carbon emissions?**
a) The need for international - indeed global - agreement on the need to limit and reduce carbon emissions is absolute. This doesn't mean that sub-global efforts should wait until global agreement is reached. However, it does mean constantly reaffirming the need for, and working for, an international, intergovernmental agreement and a model of what it is.
- 5.6. **If international agreements are needed, what shape and form should they take?**
a) In respect of carbon emissions, the overall agreement needed is "Contraction and Convergence" (C&C) [See Annex One definition statement for details].
- 5.7. **How would they relate to the Kyoto protocol the EU Emissions Trading Scheme?**
a) The parent of the existing agreements cited here is the United Nations Framework Convention on Climate Change (UNFCCC) signed in Rio in 1992 and subsequently ratified into force. The secretariat of these UNFCCC negotiations has now and for more than a year, taken the position that achieving the objective of the Convention "inevitably requires 'contraction and convergence'. So the question is better answered by recognizing that the cited schemes need to explain their relevance to C&C and the UNFCCC.
b) It is worth quoting the RCEP 22nd Report item 4.47 for the recommendation: *"Continued, vigorous debate is needed, within and between nations, on the best basis for an agreement to follow the Kyoto Protocol. Our view is that an effective, enduring and equitable climate protocol will eventually require emission quotas to be allocated to nations on a simple and equitable per capita basis. There will have to be a comprehensive system of monitoring emissions to ensure the quotas are complied with."*
- 5.8. **In particular, to what extent would an international emissions trading system offer the most effective opportunity for reducing global emissions? Could other (bespoke) approaches offer better and more targeted solutions?**
a) Trading on the basis of equal emission rights provides the incentive for all countries to reduce emissions. Industrial countries will wish to reduce emissions in order to need fewer emission coupons. Poor countries will wish to keep their emissions low so that they have more coupons to sell. Incentive is more effective than any other measure.
b) But trading carbon entitlements per se will not be effective in reducing carbon emissions globally. Without non fossil-fuel energy alternatives in play, this market would be a reluctant and futile negative-sum game and not gain private sector traction.
c) And even with the gradual uptake of non-fossil-fuel alternatives, present emissions-trading arrangements are 'cost-effective' in a very doubtful sense. 'Under-achievement' on fossil fuel mitigation is frequently re-presented as 'over-commitment' and so caps are relaxed. However, to minimize damage costs, the imperative of global decarbonisation is very pressing. So 'over-achievement' [which reveals a tradable surplus] should if anything be reframed as 'under-commitment' and 'over-entitlement'. C&C is intended to legitimate the entitlement of under-consuming third parties. Ironically, while these are often too remote to register their claim, they are also periodically wrongly accused of not supporting C&C.
d) As things are still without global structure, carbon-trading is often described as 'picking low hanging fruit'. In system terms, it is more chaotic than stochastic. In process terms, it is more like 'carpet-bagging' and 'carbitrage' than meaningfully 'cost-effective' as it depends on a range of faulty premises to demonstrate 'positive-achievement'.
i) We need but don't yet have and accountable, globally inclusive 'framework-based market' such as C&C within which to measure effective rates of change indexed to achieving the objective of the UNFCCC. The absence of this makes all parties even more vulnerable through third party exclusion.
ii) It is error to make fossil carbon [hydro-carbon] stocks and biological carbon [carbohydrate] flows commensurate. It compounds error when the social costs and benefits of using these across societies, whose dependence on and vulnerability to stocks and flows of these two forms of carbon, varies greatly. For example, tokenistic products claiming 'carbon-neutrality' have appeared in the market where it is claimed that fossil carbon burning is 'biologically off-set' by tree-growing.
iii) These mitigation 'benefits' between high-emitting first and second parties are not indexed to the mortality, damage and adaptation costs that the 'under-achievement' imposes on vulnerable



and frequently low-emitting third parties. Sadly, these third party costs are already rising and are an unethical negative cost, or subsidy, to the trades of reluctant and tokenistic first and second party under-achievers.

iv) Taken together, under-commitments, errors of commensuration, trading these blind to third-party damage costs are suggested as part of a viable 'a market-based framework'. In reality, this institutionalises error and constitutes avoidance. It further dissipates the political will to break our fossil fuel dependence and – with suicidal undertones - commits us to increasingly fraught and possibly hopeless adaptation challenges.

5.9. **Could an international emissions system come about in a voluntary (unstructured) manner?**

a) Not a traded one. This requires 'self-capping' and would result in the persistent failure of under-commitment as the desire to profit from trade would result in a market of 'under-committed' sellers with no buyers.

5.10. **Or would it require a more structured and regulated approach (as reflected in the EU ETS)?**

a) The real question here is how we compare the difference between no structure and some structure in a regional scheme, with the difference between some regional structure and the internationally inclusive structure necessary to solve the global problem. The answer is that some structure is better than no structure, but some structure is not enough and only some-structure is futile.

b) A full-term global structure is pre-requisite to survival.

5.11. **What downsides are there to emissions trading? In particular, will countries/companies simply walk away when the going gets tough?**

a) Trading like taxes, as we presently understand them, are at-the-margins with reflexively marginal expectations of change. The new situation shows that the changes that are coming at us are anything but marginal and that there's nowhere for companies and countries to walk away to. It used to be that, 'while some do sink, most boats do rise on the tide'. Now that 'we're all in the same boat', fighting for resources will sink it for all. Faced with this prisoner's dilemma, auctioning resources can help, but subject to the requirement for a coherent and constitutional rationing system like C&C. Emissions cap-and-trade should be understood in this light and the realization that, *"you can't trade what you don't own."*

b) GCI believes that companies prefer long-term stability and would welcome the opportunity to demonstrate collective social responsibility by taking up the global standard of *"C&C compliance"* and defending this global basis of capping and trading to the UNFCCC.

5.12. **How certain can we be that these will deliver the absolute reductions in emissions required?**

a) We can be sure the absolute reductions are required, we can be sure that trading and taxes alone will not deliver. That said, *"C&C Compliance"* and what we should think of as the C&C Roadmap-and-Trade, however visionary, is still less improbable than eco-taxes the make-it-up-as-you-go-along cap-and-trade-casino that Kyoto presently hunches on the back of the often forgotten UNFCCC.

5.13. **To what extent should any such scheme (an international ETS or some other form of post-Kyoto agreement) be seen as a way of channelling low-carbon technology investment from developed countries into least developed and developing countries (e.g. through mechanisms such as the Clean Development Mechanism)?**

a) To pay the considerable opportunity-cost that raised greenhouse gas concentration in the atmosphere represents to Developing Countries [sometimes referred to as 'historic responsibilities' or 'ecological debt'] this needs to be - and is - a core structural feature of the C&C proposal. It embeds the coherent negotiating property of being able to accelerate the rate of convergence to equality of tradable permits relative to the rate of contraction [see reference]. This, in other words, potentially increases climate-purchasing power in Developing Countries. This will enable them to initiate non-hydro-carbon development. It will also stimulate the markets for this.

b) The notion circulated still at the 'Developed' end of the global argument, that this understanding of C&C is not supported in Developing Countries is not supported by the evidence. The contrary is true and the evidence is considerable. [see annex 3 & 4].

5.14. **Would least developed and developing countries be able to adequately exploit an international scheme (ETS or whatever), or would a lack of skills and resources prevent them from doing so? (Capacity building issue)**



a) There is of course a so-called 'capacity-building' issue here. But Developing Countries have not been spared structural adjustment at the hands of the IMF. They have had to develop the capacity to face the almost impossible demand to make their export-led growth also keep their public services going in the face of private commodity prices adversely determined in Chicago, with international currency speculation at the expense of the soft currencies, not to mention external debt service alongside a US trade-deficit that is now accumulated at over four trillion dollars, under-written as the US say by their Pacific fleet.

b) So it is wholly disingenuous of parties here in the UK to suggest that Emissions Trading is 'too difficult' for Developing Countries to deal with precisely at the moment that the C&C Road-map structurally recognizes that because of the 'ecological debt' they have rights to the majority share of a key global resource in what is obviously a seller's bull-market.

c) These are some of the issues tied up with why DEFRA, [rather than DFID], disingenuously argues that Developing Countries either don't support C&C, or when they do it is 'for the wrong reasons'.

d) The thing that is apparently, still after fifteen years, 'too difficult' for 'experts' advising and bureaucrats organising the over-consuming Developed Countries, is to accept that 'equity is the price of survival'. C&C is supported by many Developing Countries precisely because the C&C formulation of environmental limits and equal rights enables us all to come to the constitutional terms of global governance necessary for survival. For advisors here to tactically ignore this while revising the risks downwards and developing country incapacity and disinterest upwards, is dishonest folly and should be debated openly.

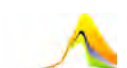
5.15. What priorities on Climate Change should the UK pursue prior to and during its presidencies of the EU and G8 in 2005? To what extent should the primary focus be on a post-Kyoto framework? Are there any other short or medium-term issues which should be part of the UK agenda? If so, what?

a) Speak the truth and take the consequences. If our leaders aren't sure what to do, they should say so.

b) The apex need is for leadership and no bluffing. In principle this is 'leadership by idea'. This means articulating a coherent full-term global strategy to avoid dangerous rates of climate change. This means C&C as means and ends – C&C as both cause and effect, as both stock and flow - must be clearly laid out emphasizing the structural feature that convergence can and should be accelerated relative to contraction, rather than contraction delayed relative to the rate of convergence. This means energy reform and energy-backed currency-reform.

c) African countries will propose this to the G-8 through the Africa Commission at DFID. Following this lead, however difficult, the UK government should amplify it at the G-8 stabilising the short and medium term process by addressing the full-term imperative.

d) However difficult, this is preferable to remaining collectively trapped in the confusion of the uneconomic growth rates of change in which we continue to generate the climate problem faster than we organize the global C&C solution. Nothing more, or less, than full-term C&C agreement enables all of us and our descendents to become first parties to a comprehensive and constitutional agreement to survive. We should be truthful about this.



Sustainable Development, C&C and the UN Framework Convention on Climate Change and the Intergovernmental Panel on Climate Change

1.1 1990: IPCC FIRST Assessment Report [FAR]

In 1990 the first Assessment Report of the IPCC was published. It established the need for the “Contraction” of Greenhouse Gas emissions [GHGs]. This was the recognition that cuts in the emissions of GHGs in the order of 60-80% would be needed to halt the rise of their concentrations in the atmosphere. This was the basis of the UNFCCC.

1.2 1992: UN FRAMEWORK CONVENTION on CLIMATE CHANGE [UNFCCC]

The necessity for the Convention. Parties to the UNFCCC, ‘acknowledge that change in the Earth’s climate and its adverse effects are a common concern of humankind.’ They are, ‘concerned that human activities have been substantially increasing the atmospheric concentrations of greenhouse gases, that these increases enhance the natural greenhouse effect, and that this will result on average in an additional warming of the Earth’s surface and atmosphere and may adversely affect natural ecosystems and humankind’ (Preamble).

The Convention’s objective. The Convention ‘is to achieve.. stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system.’ (Article 2) In other words, greenhouse emissions have to contract.

The Principle of Global Equity. The Parties ‘should protect the climate system for the benefit of present and future generations of humankind, on the basis of equity.’ (Article 3.1). They note that, ‘the largest share of historical and current global emissions of greenhouse gases has originated in developed countries and that per capita emissions in developing countries are still relatively low’ (Preamble). They therefore conclude ‘that in accordance with their common but differentiated responsibilities and respective capabilities the developed country Parties must take the lead in combating climate change and the adverse effects thereof’ (Article 3.1), while, ‘the share of global emissions originating in developing countries will grow to meet their social and development needs,’ (Article 3.3).’ In short, the Convention covers Convergence and a system of emissions allocation.

The Precautionary Principle. The Parties, ‘should take precautionary measures to anticipate, prevent or minimize the causes of climate change and mitigate its adverse effects. Where there are threats of serious

or irreversible damage, lack of full scientific certainty should not be used as a reason for postponing such measures . . . (Article 3.3) . .

Achieving global efficiency. Taking into account that policies and measures to deal with climate change should be cost-effective so as to ensure global benefits at lowest possible cost.' (Article 3.3) This clause points to the global trading of emissions rights. More generally, the point to note here is that the idea of a framework based on precaution and equity had been established, with efficiency introduced in a subsidiary role purely to assist it.

1.3 1995: IPCC SECOND Assessment Report [SAR]

"Monetary valuation should not obscure the human consequences of anthropogenic climate change damages, because the value of life has meaning beyond monetary value. It should be noted that the Rio Declaration and Agenda 21 call for human beings to remain at the centre of sustainable development."

<http://www.gci.org.uk/papers/zew.pdf> Annex B pages 16-18

1.4 1995: UNFCCC First Conference of the Parties COP-1

" . . . [India] equity should guide the route to global ecological recovery. Policy Instruments such as "Tradable Emissions Quotas", "Carbon Taxes" and "Joint Implementation" may well serve to make matters worse unless they are properly referenced to targets and time-tables for equitable emissions reductions overall. This means devising and implementing a programme for convergence at equitable and sustainable par values for consumption on a per capita basis globally."

<http://www.gci.org.uk/papers/Nairobi3b.pdf> Page 5

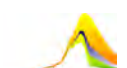
1.5 1997: UNFCCC Third Conference of the Parties COP-3

" . . . [The Africa Group] support the amendment that is proposed by the distinguished delegation from India, and just to emphasise the point of the issues that still need a lot of clarification, would like to propose in that paragraph the inclusion, after "entitlements" that is the proposal by the delegation of India, the following wording. After "entitlements, the global ceiling date and time for Contraction and Convergence of global emissions. Because we do think that you cannot talk about trading if there are not entitlements. Also there is a question of Contraction and Convergence of global emissions that comes into play when you talk about the issue of equity "

" [The USA] It does seem to us that the proposals by for example India and perhaps by others who speak to Contraction and Convergence are elements for the future, elements perhaps for a next agreement that we may ultimately all seek to engage in " http://www.gci.org.uk/temp/COP3_Transcript.pdf

1.6 2000: IPCC THIRD Assessment Report [TAR]

"A formulation that carries the rights-based approach to its logical conclusion is that of contraction and convergence." http://www.grida.no/climate/ipcc_tar/wg3/index.htm 1.3.2



The IPCC Fourth Assessment Report [AR4]

Published for the IPCC by Munasinghe Institute for Development (MIND) Colombo, Sri Lanka March 2003

CLIMATE CHANGE AND SUSTAINABLE DEVELOPMENT – VIEW FROM THE DEVELOPING WORLD

Kirit Parikh Chairman,

Integrated Research & Action for Development New Delhi

"The Rich are delaying action, but delay is free riding. The difference between the likely emissions of OECD countries, even if Kyoto Protocol is fully implemented, and what would have been under the FCCC understanding will exceed India's emissions of CO₂ over the next 40 years."

"Adaptation should not be an excuse for avoiding mitigation. "You adapt, I would not mitigate" is not acceptable."

"Convergence and contraction in an equitable way should mean developing countries should have the right to converge to the level of per capita emissions of developed countries (DCs) world any time and then to contract together, not that LDCs converge and DCs contract to a sustainable level."

"An equitable solution is obvious: Tradable emission quotas over a long time horizon in terms of tonne-years of carbon in the atmosphere which are equitably distributed, within specified range that narrows as knowledge firms up, can endogenise many of the problems."



Here, an Indian expert to IPCC at an event to which the Indian Prime Minister contributed, sets a key-note message for an IPCC plenary in preparation for the 4th Assessment. It clearly emulates GCI's 'convergence accelerated relative to the contraction rate' in order to take C&C - as he puts it - from being 'unfair' to being 'equitable'.

This is perhaps why UK officials at DEFRA say that India [and other countries] supports C&C 'for the wrong reasons'.

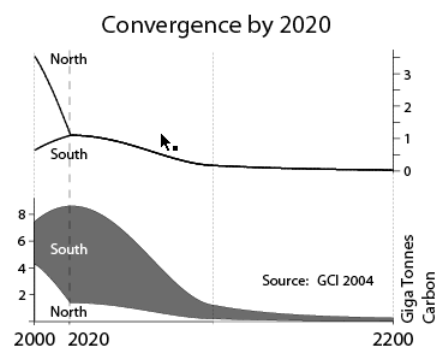
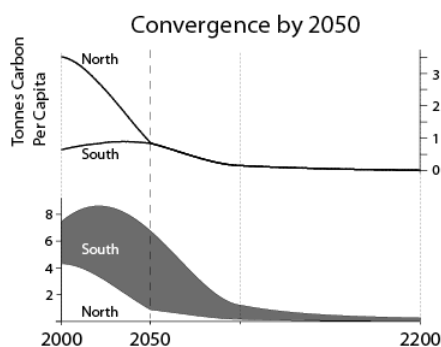
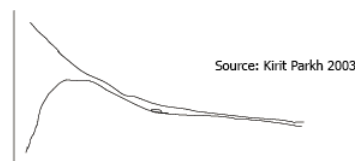
Convergence and Contraction

- Unfair



Convergence and Contraction

- Equitable



INDIA-UK Joint Declaration - London; September 20, 2004

Prime Ministers Manmohan Singh and Tony Blair in London; their statement just avoids the issue.

Sustainable Development

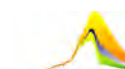
"Both our countries recognize that co-operation is essential to deliver the progressive global agenda set by the Johannesburg World Summit on Sustainable Development and the Millennium Declaration. We will initiate regular high-level dialogue to share experiences on how we can overcome social, economic and environmental challenges, and bring real quality of life improvements for people in both our countries and around the world.

Climate change and broader issues of sustainable energy security are high on our respective agendas.

Climate change will be a central theme of the UK's Presidencies of the G-8 and EU next year.

We will promote effective co-operation in our responses to climate change, including by building on the successful joint work that has already been carried out by the UK and India on climate change impacts and modelling.

To this end, we will establish a structured dialogue to exchange views and information and take forward any bilateral co-operation projects."



References

1 Governments

- 1.7 **Indian Environment Minister**, Kamal Nath, COP 1, April 1995
<http://www.gci.org.uk/papers/zew.pdf> page 17
-

"..equity should guide the route to global ecological recovery. Policy Instruments such as "Tradable Emissions Quotas", "Carbon Taxes" and "Joint Implementation" may well serve to make matters worse unless they are properly referenced to targets and time-tables for equitable emissions reductions overall. This means devising and implementing a programme for convergence at equitable and sustainable par values for consumption on a per capita basis globally."

- 1.8 **Chinese State Councillor Climate Change & Population**, Dr Song Jian, Oct 1997
<http://www.gci.org.uk/cop3/songjian.html>
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"When we ask the opinions of people from all circles, many people, in particular the scientists think that the emissions control standard should be formulated on a per capita basis. According to the UN Charter, everybody is born equal, and has inalienable rights to enjoy modern technological civilization."

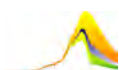
- 1.9 **The Africa Group**, August 1997
<http://www.gci.org.uk/refs/C&CUNEPIIIb.pdf>
-

"As we negotiate the reduction of GHG, the countries of Africa believe that there should be certain principles that need to be clearly defined.

1. There must be limits on all GHGs if the danger to our climate is to be averted. The IPCC scientific assessment report provides us with the basis for global consensus on such limits.

2. A globally agreed ceiling of GHG emissions can only be achieved by adopting the principle of per capita emissions rights that fully take into account the reality of population growth and the principle of differentiation.

3. Achievement of a safe limit to global GHG emissions can be achieved by reducing the emissions of Annex One while at the same time ensuring that there is controlled growth of future emissions from Non-Annex One countries, reflecting our legitimate right to sustainable economic growth. We strongly believe that this will take us along a path to responsible climate management that allows us to reach our goal of defining a mutually agreed point of convergence and sustainable development. Such a convergence Mr. Chairman must ensure that we maintain a global ceiling on emissions to prevent dangerous interference with the climate system.



4. When we look at time frames, we believe that insufficient commitment by Annex One countries will only result in delaying our influence on the climate system. If this course is maintained, then we will all suffer and the burden will be even greater for humanity in general. The burden for any future mitigation efforts on those of who have not been historically and currently responsible for creating the problem will be greater.

Mr. Chairman, we must focus our attention on the most appropriate, reasonable and acceptable time frame for action. There is an over-riding prerequisite. The time frame cannot be too far away into the future if we are to avoid at all costs the dangers that global climate change poses. The current scientific evidence indicates that Africa faces decline in water resources, agricultural production and economic performance. It is for this reason that we wish to register the seriousness with which we view the effective implementation of the Convention and future agreements emanating from it."

1.10 The Africa Group, COP-3 Kyoto, 3a.m. 10th December 1997
http://www.gci.org.uk/temp/COP3_Transcript.pdf page 16

" . . . we do support the amendment that is proposed by the distinguished delegation from India, and just to emphasise the point of the issues that still need a lot of clarification, would like to propose in that paragraph the inclusion, after "entitlements" that is the proposal by the delegation of India, the following wording. After "entitlements, the global ceiling date and time for Contraction and Convergence of global emissions. Because we do think that you cannot talk about trading if there are not entitlements. Also there is a question of Contraction and Convergence of global emissions that comes into play when you talk about the issue of equity "

1.11 Non-Aligned Movement, Heads of Government Conference, (NAM), September 1998
http://www.gci.org.uk/consolidation/Letters_Articles_1989_2002.pdf Page 202

"In August and September the NAM held a heads of Government conference in South Africa. Combining the logic of "Contraction and Convergence" with the trade Article 17 of the Kyoto Protocol (KP), the NAM agreed the following statement: -

"Emission trading for implementation of (ghg reduction/limitation) commitments can only commence after issues relating to the principles, modalities, etc of such trading, including the initial allocations of emissions entitlements on an equitable basis to all countries has been agreed upon by the Parties to the Framework Convention on Climate Change."

1.12 Indian Prime Minister, Shri Atal Bihari Vajpayee, October, COP-8, 2002
http://unfccc.int/cop8/latest/ind_pm3010.pdf Page 3

"First, our per capita Green House Gas emissions are only a fraction of the world average, and an order of magnitude below that of many developed countries. This situation will not change for several decades to come. We do not believe that the ethos of democracy can support any norm other than equal per capita rights to global environmental resources."

1.13 Kenyan Minister for Planning and National Development, Anyang Nyong'o, April 2004
<http://www.gci.org.uk/speeches/Nyongo.pdf>

"It is now apparent that the world has to urgently agree to a more equitable method of reducing greenhouse gas emissions based on per capita emission rights allocations. This brings me to the concept of Contraction and Convergence. This concept embodies the principles of precaution (contraction of greenhouse emissions) and of equity (convergence at to equal share per head through a globally agreed date) in the reduction of greenhouse gas emissions between industrialized countries and developing countries.

The world must go an extra mile to avoid climate change, as it is cheaper than adapting to the damages. This in no way under estimates what the Kyoto Protocol aims to achieve from the flexible mechanisms. Kyoto should continue but due to the increasing



and unbearable negative impacts of climate change on developing country economies, in particular Africa, the world must begin to evaluate other globally equitable approaches.

The concept of Contraction and Convergence therefore needs to be assessed and evaluated by the United Nations Framework Convention on Climate Change particularly, its Subsidiary Body for Scientific and Technical Advice or the Intergovernmental Panel on Climate Change. I am certain that our Ministers for Environment here present will see the need to bring this agenda very urgently to the attention of the Climate Change Secretariat.”

1.14 Kenya, Director General of the ruling NARC, Alex K Muriithi, April 2004

<http://lists.topica.com/lists/GCN@igc.topica.com/read/message.html?sort=d&mid=1716633749&start=365>

“Avoiding dangerous rates of climate-change from fossil fuel dependency must be strategically guaranteed with appropriate structural adjustment of the international system.”

“The Contraction and Convergence” (C&C) scheme presented by the Africa Group at COP-3 in Kyoto, is the basis of this.”

“Combined with international currency arrangements, C&C determined carbon shares create an inclusive global standard for sustainable resource use.”

“The full rent for the use of the environmental and atmospheric space of Developing Countries, can be paid by the Developed Countries helping the world move from uneconomic growth to sustainable development for all,”

1.15 Indian Minister of Food Processing Industries, Shri S. K. Sahay, October 2004

<http://lists.topica.com/lists/GCN@igc.topica.com/read/message.html?mid=1717677814&sort=d&start=390>

“We have to find an acceptable and equitable way to reduce emissions that involves every society but recognizes differentiated responsibilities. I suggest that the way forward should be based on the fundamental principles of equity incorporated in the proposals known as “Contraction and Convergence.”

In this increasingly interdependent world, there is no reason to suggest that any individual in any country should have a lesser right to see prosperity or comfort involving green house gas emissions than any other. On what basis is it acceptable that an American or European should have a greater right to consume the World’s precious resources than an Indian, an African or indeed any other human being?

Thus, if the principle of “Contraction and Convergence” is acceptable, then it may be possible to develop a system of carbon trading that would allow those already over dependent on the use of environmentally damaging energy to plan their emissions reduction more slowly by transferring renewable energy technologies to those countries presently less dependent on the carbon emissions.”

1.16 USA, COP-3 Kyoto, 3a.m. 10th December 1997

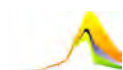
http://www.gci.org.uk/temp/COP3_Transcript.pdf

“ . . . It does seem to us that the proposals by for example India and perhaps by others who speak to Contraction and Convergence are elements for the future, elements perhaps for a next agreement that we may ultimately all seek to engage in . . . ”

1.17 European Parliament, 1998

http://www.environment.fgov.be/Root/tasks/atmosphere/klim/pub/eu/parl/pre%20ba_en.htm

“. . . calls on the Commission & Member States to take the lead in brokering an agreement on a set of common principles & negotiating framework beyond BA based on:



1. agreement to have a worldwide binding limit on global emissions consistent with a maximum atmospheric concentration of 550 ppmv CO₂ equivalent,
2. initial distribution of emissions rights according to the Kyoto targets,
3. progressive convergence towards an equitable distribution of emissions rights on a per capita basis by an agreed date in the next century,
4. across-the-board reductions in emissions rights thereafter in order to achieve the reduction recommended by the Intergovernmental Panel on Climate Change (IPCC),
5. an agreement to have a quantitative ceiling on the use of flexibility mechanisms that will ensure that the majority of emission reductions are met domestically in accordance with the spirit of articles 6, 12 and 17 of the Kyoto protocol; in this context trading must be subject to proper monitoring, reporting and enforcement;
6. an adequately financed mechanism for promoting technology transfer from Annex 1 to non-Annex 1 countries;"

1.18 **Danish Environment Minister, Svend Auken, April 1999**

"The approach of "Contraction and Convergence" is precisely such an idea. It secures a regime that would allow all nations to join efforts to protect our global commons from being over-exploited, without the risk that any country would be deprived of its fair long-term share of the common environmental emission space. And it allows for consistent and efficient management of the global emissions that would enable us to strive for constraining global interference with the climate below fixed ceilings"

1.19 **Swedish Minister of the Environment, Kjell Larsson, September 2000**

"On the issue of equity, Sweden strives for a global convergence, meaning that the long term objective of the international community should be a per capita emissions target equal for all countries. The work towards sustainability embraces the right for the poorest countries to continue their development and requires that the developed world contribute to this. In other words the industrialised countries must reduce their emissions in order to enable the least developed countries to develop."

1.20 **Belgian Minister of the Environment, Olivier Delouze, COP6 November 2000**

"We are conscious that in the end, we will have to inevitably evolve towards a more equitable partition between the north and south, of the capacity of our common atmosphere to support green house gases, by a gradual convergence of the levels of emissions on a per capita basis."

1.21 **French President, Jaques Chirac, COP6, November 2000** <http://www.sovereignty.net/center/chirac.html>

"Since 1992, we have fallen too far behind in the fight against global warming. We cannot afford any further delay. That is why, I can confirm to you here, Europe is resolved to act and has mobilized to fight the greenhouse effect. Europe calls upon the other industrialized countries to join with it in this fight. And Europe proposes to the developing countries to join it in a partnership for sustainable development.

Let us start thinking about the post-Kyoto period without further ado. Tomorrow, it will be up to us to set forth the rights and duties of each, and for a long time to come. In order to move forward while respecting individual differences and special circumstances, France proposes that we set as our ultimate objective the convergence of per capita emissions. This principle would durably ensure the effectiveness, equity and solidarity of our efforts."



1.22 **Netherlands Environment Minister, Jan Pronk, Chairman of COP-6, July 2000**
http://www.earthtimes.org/jul/environmentthekyotoprotocoljul25_00.htm

" . . . Suggestions have been made for commitments for those developing countries in the period after 2012 in terms of increased energy or greenhouse gas efficiency. In other words: not an absolute cap, but a relative efficiency improvement in the production structure of developing countries. This strategy would imply that developing countries gradually start participating, as they achieve a certain level of economic development. That is a reasonable and realistic option. However, it can be argued that such gradual participation would only lead to a slow decline of global emissions, even if current industrialized countries would drastically decrease their emissions. As a result global average temperature increase would significantly exceed the 2 degrees centigrade limit that could be seen as the maximum tolerable for our planet.

There are alternatives for this scenario. Some developing countries have argued for an allowance of equal emissions per capita. This would be the most equitable way to determine the contribution of countries to the global effort. If we agree to equal per capita emissions allowances for all countries by 2030 in such a way that global emissions allow us to stay below the 2 degrees global temperature increase (equivalent to about 450 ppmv CO₂), then the assigned amounts for Annex B countries would be drastically reduced. However, due to the fact that all countries would have assigned amounts, maximum use of global emissions trading would strongly reduce the cost of compliance. So, in such a scenario, industrialized countries would have to do more, but it would be cheaper and easier. . . . "

1.23 **Sweden's third national communication on Climate Change, 2001**
<http://www.regeringen.se/content/1/c4/12/88/96b4e59c.pdf>

"Emissions should ultimately converge towards a common international target, expressed as emissions per inhabitant.¹¹"

¹¹ Gov. Bill 1996/97:84, p 74



2 Publications

- 2.1 **Corner House**, Briefing No.3 - Climate and Equity, December 1997
<http://www.thecornerhouse.org.uk/briefing/03climate.html>
-

“Trading emissions only have a place if they are set in the discipline of contraction and convergence”

- 2.2 **Financial Times**, 30th November 2001
<http://specials.ft.com/worldconomy2001/FT30CRLVJUC.html>
-

“Many politicians - and businesses making long-term investment plans - would prefer to agree on some overarching principles that would determine future emissions targets.
For some policymakers, the answer is “contraction and convergence”.

- 2.3 **ENDS Report**, Blair leadership claim on climate change March 2003
<http://www.endsreport.com>
-

“...the RCEP said, future global climate agreements should be based on the so-called “contraction and convergence” approach, under which national emission allocations converge towards a uniform per capita figure.

The Government has accepted the RCEP’s 60% figure – but not the underlying logic”

- 2.4 **New Scientist**, December 2003
<http://www.newscientist.com/hottopics/climate/climate.jsp?id=ns99994467>
-

“For the past two weeks, representatives from around the world have been in Milan, Italy, for COP9, the ninth annual meeting of signatories to the 1992 Framework Convention on Climate Change. Many of them now privately admit that C&C is what we have been waiting for.”

- 2.5 **ICE**, Proceedings of the Institution of Civil Engineers, Paper 13982, December 2004
<http://www.thomastelford.com/jol/>
-

“‘Contraction and convergence’ is an ambitious yet widely supported plan to harmonise global greenhouse gas emissions to a safe and sustainable level.”

- 2.6 **Reason Online**, Ronald Bailey, November 3, 2004
<http://reason.com/rb/rb110304.shtml>
-

“While the climate talks in Buenos Aires will deal with the minutiae of implementing the Kyoto Protocol, they will also turn to considering what the next steps might be. And there will have to be next steps, because even when fully implemented the Kyoto Protocol will have next to no effect on any actual global warming trends. My bet is that negotiations will start to consider contraction and convergence”



3 Individuals

- 3.1 **Raul Estrada**, Chair Kyoto Negotiations, February 2000
http://www.gci.org.uk/articles/Estrada_on_C&C.pdf

“Long before the end of the Framework Convention negotiation, the Global Commons Institute has presented a proposal on “Contraction and Convergence”, aimed to reach equality in emissions per capita. We all in this room know the GCI model where contraction is achieved after all governments, for precautionary reasons, collectively agree to be bound by a target of global GHG emissions, making it possible to calculate the diminishing amount of greenhouse gases that the world can release each year in the coming century, subject to annual scientific and political review. The convergence part of the proposal means that each year’s global emissions budget gets shared out among the nations of the world so that every country converges on the same allocation per inhabitant by an agreed date.”

- 3.2 **Sir John Houghton**, Former Chair IPCC Working Group One, 26th April 2003

“Admiration is frequently expressed, regarding the elegance and simple logic of Contraction and Convergence and it has been widely supported by policy makers as a basis that should underlie the next stage of policy formulation.”

- 3.3 **Lord Bishop of Leicester**, November 2003
http://www.publications.parliament.uk/pa/ld199900/ldhansrd/pdvn/lds04/text/40209-10.htm#40209-10_head0

“Contraction and convergence, therefore, is a simple yet radical solution, and one that I suggest we should be brave enough to support.”

- 3.4 **Lord Bishop of Hereford**, 9th February 2004
<http://www.publications.parliament.uk/pa/ld199697/ldhansrd/pdvn/lds03/text/31127-05.htm>

“Contraction and Convergence meets every single objection raised by the United States to Kyoto.”

- 3.5 **Michael Meacher MP**, Former Minister for the Environment, December 2003
<http://www.commondreams.org/scriptfiles/views03/1207-04.htm>

“The best proposal so far is the “Contraction and Convergence” from the Global Commons Institute and Globe Parliamentarians.”

- 3.6 **George Monbiot**, Manifesto for a New World Order, ISBN: 1565849086, 2003

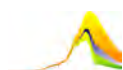
“Contraction & Convergence... “the only just and sustainable means of tackling climate change”

- 3.7 **Myron Ebell**, CEI reports on COP-9, 12th December 2003
<http://www.globalwarming.org/cop9/cop9e.htm>

“This so-called “Contraction and Convergence” approach appeals to both unreconstructed communists and to human rights absolutists. It has a certain moral force for those lost souls who have completely lost their bearings in the world. So it ought to be the winner in these darkening times.”

- 3.8 **Dick Lindzen**, After a good meal at “A New Global Vision” Conference, Pisa, July 2004

“If you really have to stabilise concentrations, a 60% contraction of emissions would be necessary. As for the convergence requirement that follows from this, well I have no faith in the ability of humanity to organise anything like this.”



4 Organisations

- 4.1 **Africa Group**, Mrs. Rungano Karimanzira, Chair, February 1998
http://www.gci.org.uk/Archive/MegaDoc_19.pdf

“The approach of contraction and convergence presents a new economic development paradigm for the twenty first century and beyond.”

- 4.2 **Royal Society on Environmental Pollution**, Sir Tom Blundell; Chairman, June 2000
<http://www.rcep.org.uk/newenergy.htm>

“The government should press for a future global climate agreement based on the ‘Contraction and Convergence’ approach, combined with international trading in emission permits. These offer the best long-term prospect of securing equity, economy and international consensus.”

- 4.3 **UK Chartered Insurance Institute**, Report on Global Climate Change, March 2001
http://www.gci.org.uk/Archive/MegaDoc_19.pdf

“The most realistic way to bring about the required reduction in ghg emissions (which will have the combined effect of reducing the damage imposed on the insurance industry and encouraging the transition to renewable energy) is that proposed in the concept of Contraction and Convergence.”

- 4.4 **IPCC WG3**, Third Policy Assessment, Chapter 1, Section 3.2, 2001
http://www.grida.no/climate/ipcc_tar/wg3/pdf/1.pdf

“A formulation that carries the rights-based approach to its logical conclusion is that of contraction and convergence.”

- 4.5 **Green Party**, Climate Change Policy,
<http://policy.greenparty.org.uk/mfss/climchg.html>

“The Green Party advocates the adoption by the UNFCCC of a framework of Contraction and Convergence (C&C) as the key ingredient in the global political solution to the problem of Climate Change mitigation, and urges the UK and other governments use it as the basis for negotiations in the international fora ”

- 4.6 **New Economics Foundation**, Ed Mayo, Director, October 2002
<http://www.gci.org.uk/correspondence/NefEdC&C.pdf>

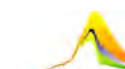
“We regard Contraction and Convergence as no less than the logical starting point for any sustainable future.”

- 4.7 **Performance and Innovation Unit**, The Energy Review, February 2002
<http://www.number-10.gov.uk/su/energy/TheEnergyReview.PDF>

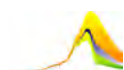
“The RCEP suggested that a 60% reduction for the UK by 2050 would be needed within a contraction and convergence agreement”

- 4.8 **UNEP Finance Initiatives**, 7th October 2002
http://www.unepfi.net/cc/ceobriefing_ccwg_unepfi.pdf

“For the long-term, policy makers should reach consensus on a global framework for climate stability based on the principles of precaution and equity such as Contraction and Convergence which would aim to achieve equal per capita emissions for all nations by an agreed date.”



- 4.9 **UNFCCC**, Secretariat, COP-9, 4th December 2003
http://www.gci.org.uk/slideshow/C&C_UNFCCC.pdf
 “Stabilization inevitably requires ‘contraction and convergence’”
-
- 4.10 **World Council of Churches**, David Hallman, Programme Coordinator, October 2003
<http://www.wcc-coe.org/wcc/what/jpc/moscow2003.html>
 “A fair distribution, establishing the concept of per capita emission rights for all countries, as proposed in the ‘Contraction and Convergence’ scheme.”
-
- 4.11 **Climate Network Africa**, Grace Akumu, Director, 28th April 2003
http://www.gci.org.uk/Archive/MegaDoc_19.pdf
 “Many governments around the world have accepted the concept of Contraction and Convergence as the only equitable response mechanism to the threat of climate change.”
-
- 4.12 **UK Environment Agency**, Sir John Harman; Chairman, 9th December 2003
<http://www.gci.org.uk/correspondence/EnvAgency.pdf>
 “I support the concept of ‘Contraction and Convergence’, as does the Environment Agency.”
-
- 4.13 **World Nuclear Association**, John Ritch, President, December 2003
<http://world-nuclear.org/dgsspeeches/wiltonpark2003.htm>
 “I not only support the C&C concept, I find it inconceivable that we will avert climate catastrophe without a regime built on some variation of this approach. In the debate about climate change, an impression has been created that the problem is too daunting and complex to prevent. Contraction and Convergence provides a way forward that is both fair and feasible.”
-
- 4.14 **FEASTA**, Richard Douthwaite;
<http://www.feasta.org/events/debtconf/sleepwalking.htm>
 “. . . to say - as a growing number of people now do - that the right to emit carbon dioxide should be considered a human right and that emissions permits should therefore be issued to all humankind on an equal basis. ‘Contraction and Convergence’, a surprisingly flexible plan is based on this idea.”
-
- 4.15 **WBGU**, German Advisory Council on Global Change, Dr. John Schelnhuber; Climate Protection Strategies for the 21st Century: Kyoto and beyond, November 2003
http://www.wbgu.de/wbgu_sn2003_engl.pdf
 “. . . WBGU recommends emission rights be allocated according to the ‘Contraction and Convergence’ approach.”
-
- 4.16 **IPPR**, Tony Grayling, Associate Director and Head of Sustainability, September 2003
<http://www.blackwell-synergy.com/links/doi/10.1111%2F1468-0041.00303>
 “The Prime Minister has already expressed his desire to create a global deal or ‘climate covenant’ between North and South on the issue of climate change. IPPR’s belief is that the Contraction and Convergence framework for global climate policy is the practical application of this aspiration.”
-
- 4.17 **Zululand Environmental Alliance (ZEAL)**, Prof. James M. Phelps, Chairman, April 2003
http://www.gci.org.uk/Archive/MegaDoc_19.pdf
 “Without equity considerations as devised in Contraction and Convergence, the Climate Change Convention and the Kyoto Protocol will remain un-implementable and leave all people on earth facing the devastating effects of climate change.”
-



4.18 **The Australia Institute, Dr Clive Hamilton, 29 April 2003**

http://www.gci.org.uk/Archive/MegaDoc_19.pdf

"The idea of 'Contraction and Convergence' is destined to be one of the most important principles governing international relations in the 21st century. It is a powerful ethic that incorporates global justice and sustainability and thereby bridges the dominant concerns of the last century and this one. It is the only way to accommodate the interests, ethical and economic, of developing countries and rich countries in the struggle to find a solution to the most important environmental problem facing the world."

4.19 **DEFRA, The Scientific Case for Setting a Long-Term Emission Reduction Target, 2003**

http://www.defra.gov.uk/environment/climatechange/ewpscience/ewp_targetscience.pdf

"Methodology:

The framework of this study builds on the RCEP work which uses a convergence and contraction methodology. Whilst prescribed per capita emissions are retained, the flexibility is such that these are only a tool to constrain total emissions and this should not be considered a typical contraction and convergence (C&C)* approach (although any mechanism which brings all emissions to a level lower than today's will have an element of C&C).

* Contraction and convergence is an international policy framework for dealing with global climate change developed by the London-based Global Commons Institute."

4.20 **WWF, Living Planet Report, November 2004**

<http://www.panda.org/downloads/general/lpr2004.pdf>

"Contraction & Convergence (C&C) as proposed by Aubrey Meyer from the Global Commons Institute (Meyer 2001) provides a simple framework for globally allocating the right to emit carbon in a way that is consistent with the physical constraints of the biosphere."

4.21 **GLA, Green light to clean power - The Mayor's Energy Strategy, February 2004**

http://www.london.gov.uk/mayor/strategies/energy/docs/energy_strategy04.pdf

"The recommendations of the Royal Commission on Environmental Pollution are based on a contraction and convergence scenario in which global emissions converge in 2050, and atmospheric CO₂ concentration is stabilised at 550ppm by 2100. The Mayor believes that all national and regional emissions reduction targets, including those proposed in this strategy, must be seen as part of this long-term process. The Government's support for the commission's recommendations for a 60 per cent reduction in emissions by 2050 implies an acceptance of the contraction and convergence scenario that produced the recommendation. The Mayor encourages the Government to acknowledge this.

policy 2 The Mayor supports the principle of contraction and convergence as a long-term international policy objective.

The contraction and convergence proposal was developed by the Global Commons Institute, London. Details of its origins, methodology, and support are available online at <http://www.gci.org.uk>."

4.22 **Church of England, Archbishop of Canterbury Dr. Rowan Williams, 5th July 2004**

<http://www.gci.org.uk/speeches/Williams.pdf>

"This kind of thinking [C&C] appears utopian only if we refuse to contemplate the alternatives honestly"

The Prime Minister has already declared that his international priorities as chair of the G-8 in 2005 will include climate change and the future of Africa; Contraction and Convergence addresses both of these"



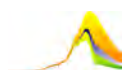
4.23 **Scottish Environment Protection Agency**, Report No. SEPA 69/04, 12 October 2004
<http://www.sepa.org.uk/pdf/board/agency/2004/papers/1210/6904.pdf>

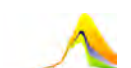
“It is essential that the EU facilitates the exporting and uptake of energy efficient technologies to developing nations, to ensure that the growth of emissions from these countries is minimised and consistent with the principles of Contraction and Convergence.”

4.24 **Liberal Democrats, Charles Kennedy**, 16th November 2004
http://www.gci.org.uk/speeches/Kennedy_C&C_Speech.pdf

“If Tony Blair is really serious in making his mark in these areas, the greatest single achievement for the UK’s G8 presidency in combating climate change would be securing agreement among G8 nations, including the United States, that the way forward will be based on this principle of contraction and convergence.”

Global Commons Institute
37 Ravenswood Rd, London E17 9LY
0208 520 4742, aubrey@gci.org.uk







"The idea of 'Contraction and Convergence' is destined to be one of the most important principles governing international relations in the 21st century. It is a powerful ethic that incorporates global justice and sustainability and thereby bridges the dominant concerns of the last century and this one. It is the only way to accommodate the interests, ethical and economic, of developing countries and rich countries in the struggle to find a solution to the most important environmental problem facing the world."

Dr Clive Hamilton;

One of Australia's leading economists



"... to say - as a growing number of people now do - that the right to emit carbon dioxide should be considered a human right and that emissions permits should therefore be issued to all humankind on an equal basis. 'Contraction and Convergence', a surprisingly flexible plan is based on this idea."

Richard Douthwaite;

One of Ireland's leading economists



"The approach of contraction and convergence presents a new economic development paradigm for the twenty first century and beyond."

Mrs. Rungano Karimanzira

Chair, Africa Group



**Royal Commission On
Environmental Pollution**

"The government should press for a future global climate agreement based on the 'Contraction and Convergence' approach, combined with international trading in emission permits. These offer the best long-term prospect of securing equity, economy and international consensus."

Sir Tom Blundell; Chairman, RCEP



"The commission might have added that contraction and convergence is comprehensive, scientifically based and equitable, unlike the Kyoto Protocol, and that contraction and convergence meets every single objection raised by the United States to Kyoto."

Lord Bishop of Hereford



"... WBGU recommends emission rights be allocated according to the 'Contraction and Convergence' approach."

Dr. John Schelnhuber;

Chairman, German Advisory Council on Global Change



"... a set of common principles will have to be based on agreement to have a worldwide binding limit on global emissions consistent with a maximum atmospheric concentration with progressive convergence towards an equitable distribution of emissions rights on a per capita basis by an agreed date with across-the-board reductions in emissions rights thereafter."

European Parliament Resolution; 1998

Archive of C&C comment and support at: - http://www.gci.org.uk/Archive/MegaDoc_19.pdf



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"A formulation that carries the rights-based approach to its logical conclusion is that of contraction and convergence."

Intergovernmental Panel on Climate Change, TAR WG3



"A fair distribution, establishing the concept of per capita emission rights for all countries, as proposed in the 'Contraction and Convergence' scheme."

**David Hallman;
Programme Coordinator, World Council of Churches**



"For the long-term, policy makers should reach consensus on a global framework for climate stability based on the principles of precaution and equity such as Contraction and Convergence which would aim to achieve equal per capita emissions for all nations by an agreed date."

UNEP Finance Initiatives



"Admiration is frequently expressed, regarding the elegance and simple logic of Contraction and Convergence and it has been widely supported by policy makers as a basis that should underlie the next stage of policy formulation."

Sir John Houghton, Former Chair IPCC Working Group One

THE JOHN RAY INITIATIVE
promoting environmental sustainability

"Many governments around the world have accepted the concept of Contraction and Convergence as the only equitable response mechanism to the threat of climate change."

**Grace Akumu
Director, Climate Network Africa**



"I not only support the C&C concept, I find it inconceivable that we will avert climate catastrophe without a regime built on some variation of this approach."

In the debate about climate change, an impression has been created that the problem is too daunting and complex to prevent. Contraction and Convergence provides a way forward that is both fair and feasible."

**John Rich
World Nuclear Association**



"It is absolutely remarkable that the idea of Contraction and Convergence has taken such a firm hold worldwide in such a short space of time."

**Tessa Tennant, Chair
Association for Sustainable & Responsible Investment in Asia**



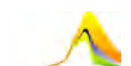
"We regard Contraction and Convergence as no less than the logical starting point for any sustainable future."

**Ed Mayo
New Economics Foundation**



"The Mayor supports the principle of contraction and convergence as a long-term international policy objective."

Ken Livingstone, Mayor of London





"The Green party of England and Wales strongly endorses the GCI/GLOBE campaign for Contraction and Convergence as the key ingredient in a global political solution to the problem of Climate Change."

UK Green Party



"Contraction and Convergence - and its mechanism for financing sustainable development is the only proposal so far which is global, equitable and growth-oriented."

Congressman John Porter
Chair, GLOBE USA



"It's just possible that there may be a meeting with the Prime Minister, in which case I shall certainly raise the [C&C] issue."

Jonathon Porritt
Programme Director, Forum for the Future

**THE CHARTERED
INSURANCE INSTITUTE**



"The most realistic way to bring about the required reduction in ghg emissions (which will have the combined effect of reducing the damage imposed on the insurance industry and encouraging the transition to renewable energy) is that proposed in the concept of Contraction and Convergence."

UK Chartered Insurance Institute



"Any political solution to climate change will need to be based on reductions in emissions, otherwise known as contraction. As the climate is owned by no one and needed by everyone, we will also have to move towards equally sharing the atmosphere, known as convergence. Collective survival depends on addressing both."

World Disasters Report 2000
International Red Cross/Crescent

HEINRICH BÖLL FOUNDATION NORTH AMERICA

"The vision of "Contraction and Convergence" combines ecology and equity most elegantly."

Heinrich Boell Foundation



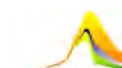
"Further and more ambitious emissions reductions targets should be agreed for the second and subsequent commitment periods, based on the principle of 'contraction and convergence' with the long-term goal of equalising per capita emissions across the world."

UK Liberal Democrats
Proposals on Energy Policy



"I support the concept of 'Contraction and Convergence', as does the Environment Agency."

Sir John Harman; Chairman, UK EA



Global Commons Institute (GCI)

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London E17 9LY
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aubrey@gci.org.uk

C&C AT THE CLIMAX OF THE KYOTO [COP3] UN CLIMATE NEGOTIATION, 10 12 1997

THE AFRICA GROUP:



" we do support the amendment that is proposed by the distinguished delegation from India, and just to emphasise the point of the issues that still need a lot of clarification, would like to propose in that paragraph the inclusion, after "entitlements" that is the proposal by the delegation of India, the following wording.

After "entitlements, the global ceiling date and time for Contraction and Convergence of global emissions, because we do think that you cannot talk about trading if there are not entitlements, also there is a question of Contraction and Convergence of global emissions that comes into play when you talk about the issue of equity "

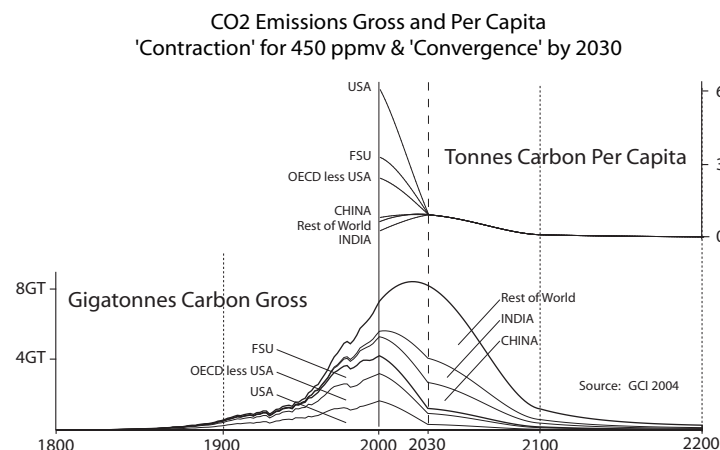
CHAIRMAN:

"I thank you very much. May I ask again the distinguished delegate of the USA if they have another suggestion to propose in connection with the proposals made by the distinguished delegate of India. He does."



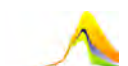
UNITED STATES OF AMERICA:

" It does seem to us that the proposals by for example India and perhaps by others who speak to Contraction and Convergence are elements for the future, elements perhaps for a next agreement that we may ultimately all seek to engage in "



For details of extensive international support for C&C, see: -

<http://www.gci.org.uk/consolidation02.html>



Martin Wright talks to the composer turned climate campaigner **Aubrey Meyer**, the man behind Contraction and Convergence.

Diminuendo

Most mavericks who plan global salvation from the upstairs room of a small terraced house in Walthamstow can reliably be written off as two bricks short of a load.

Not so Aubrey Meyer. A classical musician with a head for maths, he might easily be dismissed as the last of the gentleman amateurs, if he hadn't gradually built up a vast swell of support for his disarmingly simple plan to tackle climate change. Its converts include such unlikely bedfellows as Jacques Chirac, the archbishop of Canterbury and the government of China, and it's increasingly being seen as the much-needed 'Plan B' to succeed (or even rescue) the struggling Kyoto protocol.

All this, despite just about the ugliest name in the environmental lexicon. In a field rich in silky smooth soundbites – think Climate Care, Future Forests, Clear Skies – Aubrey has come up with... Contraction and Convergence. Not so much a clarion call to save the planet, as a rather technical description of giving birth to twins....

"Yes, and immediately I suggested it, everyone I knew said: 'Don't call it that, for

god's sake! It'll just kill it stone dead!' But the great advantage is that it does *exactly* what it says on the tin...." Which is the singular virtue of 'C&C', as it's known to its burgeoning array of fans. What it lacks as a soundbite, it more than makes up in beguiling simplicity. Like any great idea, it's tailor-made for an elevator pitch: you really can explain its essence in seconds.

So here goes: we need to cut carbon emissions to a level consistent with a liveable climate. That's the contraction bit. The fairest way to do this, and the one most likely to win the necessary support worldwide, is gradually to converge the amounts which people are allowed to emit, until every citizen of the world has an equal share.

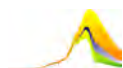
In practice, that means we need to agree on a sustainable level of carbon in the atmosphere (around 450 parts per million by volume is the ceiling most commonly quoted), and a date by which we need to reach and hold that total (2050, maybe). Then we set national emissions ceilings according to population, so as to meet that goal on the basis of 'equal shares for all'.

It's as simple, and as challenging, as that.

There are some devils in the detail (what do you do about Trinidad – tiny population, but thanks to its oil industry, absurdly huge per capita emissions?), but nothing which can't be satisfactorily fudged. (You allocate by region, not state – so Trinidad's discrepancy could, for example, be swallowed up by an Africa-Caribbean group.)

The subtle beauty of C&C is the way it neatly addresses some of the squelchiest sticking points in the whole Kyoto process. For starters, it actually sets a specific, global goal on the basis of climate science – rather than relying on national carbon reduction targets which owe as much to diplomatic expediency as hard logic.

By bringing all countries into the equation, it deals with America's concerns that booming developing nations such as India and China have no incentive under Kyoto to curb their own carbon. By supporting full international emissions trading, it allows countries to reach their goals flexibly and at least cost. It encourages them to keep making cuts way beyond any agreed targets, since that will give them more carbon permits to sell – or fewer to



"I really wanted to write music; I got a real thrill from that. In one sense, I loathe doing this work...."



buy. Finally, by insisting on equity, it addresses the third world's objection to paying for the sins of the rich.

It's this one-plan-fits-all approach which has won C&C such eclectic support. The European Parliament has voiced its approval, so has the Red Cross, the Lib Dems, and the Royal Commission on Environmental Pollution. Some in business, too, are friendly: Adair Turner, ex-head of

"The discipline of C&C is right on the surface – the beauty, the ingenuity, is all hidden."

the CBI, now with Merrill Lynch, is a fan. The insurance industry is interested, and even some of the oil companies, claims Meyer, have made privately appreciative noises.

The government remains wary, although Tony Blair has cautiously praised its "intuitive appeal". Michael Meacher, by contrast, when still environment minister,

was unequivocal: "If ever there was an initiative that deserved support... it is this brilliant and relentless campaign waged by this fiercely independent, creative and apparently quite tireless individual."

After over three hours in Aubrey's front room, I can vouch for the 'tireless'. The man's just back from the States, but any traces of jet lag are swept away in a rolling wave of loquacious, almost intimidatingly erudite passion. C&C might be a tightly focused scheme, but its author's conversation ranges wide and wild across philosophy, maths, politics, music.... A typical stream-of-consciousness might kick off with the nuances of climate politics, only to meander enthusiastically, if a little bafflingly, through yoga, Bach, Cantorian brackets and the musical stones of ancient China. He's not averse to picking up his viola, which looks suddenly tiny and fragile in his hefty paw, and plucking out fragments of a scale to illustrate a point.

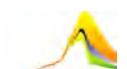
In public, he's the director of the Global Commons Institute. But don't let that fool you into thinking he's serviced by an office full of support staff – or constrained by the spin-sensitive caution of most NGOs.

Aubrey is a soloist, and that 'fierce independence' so admired by Meacher is borne out by some unlikely sympathy for Washington's stance on Kyoto. "The deepest irony in the whole debate is that the US said from the word *go* that this *had* to be a worldwide agreement [and hence involve commitments from India and China]. But they were trashed by the NGOs just for saying that a global problem needs a global solution; that if we act unilaterally it won't solve the problem. And we said: 'You're absolutely right! Those are rhetorical, posturing protest arguments by people who want to be green, but don't think through the structural consequences of what they're saying.'"

This is not a man desperate to ingratiate himself with what might be thought of as his natural allies. But Meyer is blessed with an outsider's take on it all. Born in Bradford in 1947, he was brought up in South Africa, remaining more or less untroubled by the injustices of apartheid until he went to study music at the University of Cape Town. "I might have been ignorant of the situation before," he explains, in a soft, precise South African lilt

network photographers

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mellowed by 20 years in London. “But you couldn’t exactly avoid it when the police turned up on campus with their truncheons and their guns, and started baton charging you. I wasn’t deeply involved, but I had friends who were, and just by associating with them, I too became a threatened species.”

Increasingly uneasy at the situation, he used music as a means of escaping military service, playing viola in orchestras in Europe, before returning to Cape Town in the mid-70s. There he shaped a living out of composing, playing and conducting, before apartheid’s realities came too close to home to ignore. Having befriended the (black) caretaker of his block of flats, he was horrified when the man was arrested on trumped-up charges of child abuse. He managed to have him freed, but “I realised then I had to either become really committed in the struggle, or get out. I got out.”

So it was back to Europe, to a life of conducting, composing, “to being paid for doing something I completely loved!” – and suddenly his face lights up, animation courses through him, more than at any other time in the interview... “I was writing ballets, I had royalty cheques landing on the doormat – it was like money for jam!” And then, one day in the late 80s, he was casting around for a subject for another ballet. He thought about Mandela, but by chance hit on Chico Mendes, the Brazilian rubber-tapper-turned-activist, murdered by ranchers intent on converting his rainforest home into pasture. Intrigued, Meyer started reading around issues that had scarcely touched him before – “and within three to four weeks, I was completely overwhelmed.”

The era’s wider surge of environmental concern trickled down to his four-year old daughter too. “I was putting her to bed one night, and out of the blue she asked: ‘Daddy, is the planet really dying?’ So I said: ‘I don’t think so, darling, but Daddy’ll find out, and if it is, I’ll put it right.’ And I thought, never in my youth, never in

anybody’s youth, has a kid ever had to ask a question like that.”

It was epiphany. “The penny went through the slot very hard in one go. I thought: ‘You ran away from it last time – where do you run to now?’” And suddenly music seemed completely pointless. I sold my viola, I sold my scores; for a while I just stopped playing completely.” He threw himself into the Green Party and Greenpeace, devoured *The Ecologist* and books like Jonathon Porritt’s *Seeing Green*, and started work on a scheme called ‘Equity and Survival’ – the precursor of C&C. It’s tempting to cast this as a mid-life crisis: a comfortable man in his early 40s seeking to recapture the energy and edge of youth. Not a bit of it, says Meyer. “I really wanted to write music; I got a real thrill from that. In one sense, I loathe doing this work....”

Since that burst of self-denial, he has taken up the viola again. Now, you can imagine a musician passionate about the environment using his art to touch people’s hearts – yet Aubrey spends most of his waking hours wrestling with the complexities of carbon diplomacy and the intricate maths of C&C. Don’t the constraints, the discipline of all that, chafe against his creativity?

“Well music may be all beauty on the surface, but it’s all about discipline underneath.” He picks up the viola, plucks two notes, an octave apart. “Music is very mathematical. An octave is a precise doubling – if it wasn’t, you’d hear it as out of tune.... The discipline of C&C is right on the surface – the beauty, the ingenuity is all hidden. But it’s there.”

Meyer’s not without his critics. Some warn that C&C could turn people off by equating strategies to tackle climate change with sacrifice and denial. Others are sceptical of the insistence on equal carbon quotas, arguing that this obsession with equity could in practice do little to improve the lot of the poorest, and instead detract from more creative, dynamic efforts to shift to a low carbon economy.

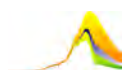
Well, life is all about living within limits, responds Meyer – and so, come to that, is music. “There’s an almost childish fear of being constrained by supposed lost opportunities – that unless you allow unlimited growth, you’re somehow missing out. It’s nonsense.”

He acknowledges that there’s an element of political persuasion for the South in the convergence element, but adds that this isn’t some kind of redistributive agenda: “It’s only entitlements; we’ll go on having emission rates that are different – that’s what the trading is for....” And convergence could win votes, too – especially if embodied in personal carbon budgets, as envisaged in the Domestic Tradeable Quotas bill [see GF49, p30]. “You’ll get paid for going by bike instead of by car. You’ll get paid for doing nothing, or doing less, or doing it differently.” Just as a small fraction of the populace owns most of the wealth, so the majority probably emit less than their ‘fair’ share of carbon. “So you won’t hit them with a carbon tax, you’ll be giving them a climate dividend! And that has to be an election winner!”

But there’s still a strong moral argument for the equitable element of C&C – and as global inequalities grow, argues Meyer, it’s increasingly in our own interest to respond to it. “In economic terms, the last 50 years have actually been about ‘expansion and divergence’. Overall, we’re richer, but the majority have got poorer. We can’t keep doing that road. Even without climate change, that’s a social explosion waiting to happen – and one that will see a lot more mothers call their kids ‘Osama’....”

“Angels are weeping; we’ve got to get in there, and do whatever it takes.”

Martin Wright is editor-in-chief of Green Futures.





The 2004 Liveable City Awards

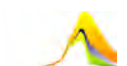
The Climate Change Champion's Award to

Aubrey Meyer, Esq.

In recognition of an outstanding personal contribution to combating climate change at an international level through his efforts to enhance the understanding and adoption of the principle of Contraction and Convergence.

Michael Savory

Alderman Michael Berry Savory
The Rt. Hon. The Lord Mayor of the City of
London

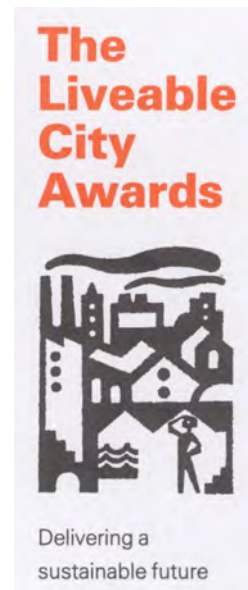


LIVEABLE CITY AWARDS 2005

17TH FEBRUARY 2005

❖ **On the day that the Kyoto Protocol comes into effect, Meyer's work on Climate Change is recognised with Lifetime Achievement Award**

In an awards ceremony at Mansion House, hosted by leading environmentalist Jonathon Porritt, The London Borough of Enfield was today named winner of the Corporation of London's Liveable City Awards 2005. The awards, open to the City's financial community and to businesses and organisations across the UK, were established by the Corporation to promote and recognise the best in sustainable business practices.



On the day that the Kyoto Protocol came in effect, a Lifetime Achievement Award was made to Aubrey Meyer for his contributions to tackling climate change. Aubrey, author of influential book "Contraction and Convergence - the Global Solution to Climate Change", is widely recognised as providing a global framework within which to resolve policies and measures to avert climate change.

Receiving his award Aubrey Meyer commented;

"I made the effort to establish Contraction and Convergence (C&C) because a fully international agreement to avert climate change is urgently needed. It is encouraging that C&C now gathers increasing international support. To discover there are people who also feel this effort deserves acknowledgement, is reward in itself."

"However, the Liveable City Award is a very welcome surprise as many eminent people were in this competition. I am grateful to them and the Corporation of London for all their efforts, and ask that we all advocate C&C together."

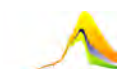
He won the award in a poll, conducted by climate change company Future Forests, of MPs, FTSE 250 Chairman/CEO's, NGO's and environmental media representatives.

Judges

The final judging panel consisted of:

- Rob Bell, editor, *Environment Business Magazine*
- John Gummer, MP
- Deputy Peter Holland, deputy chairman, Bridge House Trust
- Ram Gidoomal, chairman, London Sustainability Exchange





'Contraction & Convergence' [C&C]

1. C&C is the science-based, global climate-policy framework, proposed to the United Nations since 1990 by the Global Commons Institute (GCI).
2. The objective of safe and stable greenhouse gas concentrations in the atmosphere and the principles of precaution and equity, as already agreed in the "United Nations Framework Convention of Climate Change" (UNFCCC), provide the formal calculating basis of the C&C framework that proposes: -
 - A full-term contraction budget for global emissions consistent with stabilising atmospheric concentrations of greenhouse gases (GHGs) at a pre-agreed concentration maximum deemed to be safe, following IPCC WG1 carbon cycle modelling.
 - The international sharing of this budget as 'entitlements' results from a negotiable rate of linear convergence to equal shares per person globally by an agreed date within the timeline of the full-term contraction/concentration agreement.
 - Negotiations for this at the UNFCCC should occur between regions of the world, leaving negotiations between countries within their respective regions, such as the European Union, the Africa Union, the US, etc. The inter-regional, inter-national and intra-national tradability of these entitlements in a currency such as International Energy Backed Currency Units [EBCUs] is appropriate.
 - Scientific understanding of the relationship between an emissions-free economy and concentrations develops, so rates of C&C can evolve under periodic revision.

C&C is science-guided, rights-based, simple and easy to understand. It turns problem into solution. It answers, [1] the US demand for all-country inclusion, [2] the developing country demand for equity over emissions historically accumulated in the atmosphere and [3] the emissions-trading prerequisite of capping. It turns argument into agreement and the certainty of principle into practice.

I made the effort to establish C&C because it is needed, and C&C now has much international support. To discover there are people who also feel this effort deserves acknowledgement, is reward in itself, but the City of London's award is a welcome surprise as many eminent people were in this competition. I am grateful to them and the City of London for all their efforts and suggest we all advocate C&C together.

Players in the City's markets control more assets than most governments of the countries of the world. With much to gain, these players also have much to lose. Protection lies in formally establishing C&C-compliance as the basis of the UN Climate Treaty. Collective corporate advocacy of this is needed now.

AUBREY MEYER

Find out more: - <http://www.gci.org.uk/briefings/ICE.pdf>
[http://www.gci.org.uk/images/CC_Demo\(pc\).exe](http://www.gci.org.uk/images/CC_Demo(pc).exe)

This detailed pdf image can be zoom-viewed on-line at: http://www.gci.org.uk/images/C&C_Bubbles.pdf

